

**CONNECTICUT TEACHERS' RETIREMENT SYSTEM**

**SCHEDULE OF EMPLOYER ALLOCATIONS AND  
SCHEDULE OF PENSION AMOUNTS BY EMPLOYER**

**AS OF AND FOR THE YEAR ENDED JUNE 30, 2018**

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

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## INDEPENDENT AUDITORS' REPORT

The Retirement Board  
**Connecticut State Teachers' Retirement Board**

### *Report on the Schedules*

We have audited the accompanying schedule of employer allocations and schedule of pension amounts by employer of the Connecticut Teachers' Retirement System as of and for the year ended June 30, 2018, and the related notes to the schedules.

### *Management's Responsibility for the Schedules*

Management is responsible for the preparation and fair presentation of these schedules in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of the schedules that are free from material misstatement, whether due to fraud or error.

### *Auditors' Responsibility*

Our responsibility is to express an opinion on the schedules based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedules are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedules. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the schedules, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the schedules in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the schedules.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

## *Opinion*

In our opinion, the schedule of employer allocations and schedule of pension amounts by employer referred to above present fairly, in all material respects, the employer allocations, net pension liability, and employer pension expense and revenue of all participating entities for the Connecticut Teachers' Retirement System as of and for the year ended June 30, 2018 in accordance with accounting principles generally accepted in the United States of America.

## *Emphasis of Matter*

### *Audited Net Position of the Connecticut Teachers' Retirement System*

We have not audited the financial statements of the Connecticut Teachers' Retirement System as of and for the year ended June 30, 2018. The audit for the Connecticut Teachers' Retirement System was performed by the State of Connecticut Auditors of Public Accounts. The net position of the Connecticut Teachers' Retirement System used to calculate the net pension liability in the schedules in this report was based solely upon the amounts audited by the State of Connecticut Auditors of Public Accounts.

## *Restrictions on Use*

Our report is intended solely for the information and use of the Connecticut Teachers' Retirement System management, the State Teachers' Retirement Board, and Connecticut State and local retirement system employers and their auditors and is not intended to be and should not be used by anyone other than these specified parties.

*Marcum LLP*

New Haven, CT  
August 7, 2019

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## SCHEDULE I – EMPLOYER ALLOCATIONS

AS OF AND FOR THE YEAR ENDED JUNE 30, 2018

Employer	Expected Employer Contribution Effort for Allocation Purposes	Employer Allocation Percentage
Andover	\$ 577,353	0.045380%
Ansonia	4,192,952	0.329563%
Ashford	973,395	0.076508%
Avon	8,674,657	0.681821%
Barkhamsted	512,096	0.040250%
Berlin	6,786,365	0.533403%
Bethany	976,445	0.076748%
Bethel	6,369,195	0.500614%
Highville Chtr	581,735	0.045724%
Bloomfield	4,577,279	0.359771%
Bolton	2,091,284	0.164373%
Bozrah	583,096	0.045831%
Branford	8,154,154	0.640910%
Bridgeport	37,448,953	2.943459%
Bristol	17,502,873	1.375712%
Brookfield	6,205,172	0.487722%
Brooklyn	1,770,313	0.139145%
Cldrn Ctr Com Prog	92,639	0.007281%
Canaan	272,947	0.021453%
Canterbury	1,094,669	0.086040%
Canton	3,692,092	0.290196%
Chaplin	461,643	0.036285%
Cheshire	10,457,552	0.821956%
Chester	469,018	0.036864%
Clinton	4,963,394	0.390119%
Colchester	5,748,688	0.451842%
Amistad Acd	797,600	0.062691%
Colebrook	290,676	0.022847%
Columbia	1,309,168	0.102900%
Cornwall	315,872	0.024827%
Coventry	4,043,816	0.317841%
Cromwell	4,383,311	0.344525%
Danbury	23,601,601	1.855068%
Darien	14,185,844	1.114997%
Deep River	514,182	0.040414%
Derby	2,914,666	0.229091%

*The accompanying notes are an integral part of this schedule.*

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## SCHEDULE I – EMPLOYER ALLOCATIONS (CONTINUED)

AS OF AND FOR THE YEAR ENDED JUNE 30, 2018

Employer	Expected Employer Contribution Effort for Allocation Purposes	Employer Allocation Percentage
Eastford	\$ 404,269	0.031775%
East Granby	2,542,968	0.199875%
East Haddam	2,946,388	0.231584%
East Hampton	4,901,786	0.385277%
East Hartford	16,767,672	1.317926%
East Haven	6,240,414	0.490492%
East Lyme	6,622,254	0.520504%
Easton	2,301,735	0.180915%
East Windsor	3,346,774	0.263054%
Ellington	5,883,405	0.462431%
Enfield	11,677,242	0.917822%
Essex	673,415	0.052930%
Fairfield	26,829,241	2.108758%
Farmington	10,264,851	0.806809%
Franklin	402,484	0.031635%
Glastonbury	14,714,965	1.156585%
Granby	4,353,901	0.342213%
Greenwich	30,301,893	2.381706%
Griswold	3,919,564	0.308075%
Groton	11,425,187	0.898011%
Guilford	8,228,435	0.646749%
Hamden	14,558,428	1.144281%
Hampton	335,549	0.026374%
Hartford	43,070,353	3.385297%
Hartland	495,455	0.038942%
Hebron	1,718,316	0.135058%
Kent	611,226	0.048042%
Killingly	4,985,997	0.391896%
Lebanon	2,539,565	0.199608%
Ledyard	5,552,429	0.436417%
Lisbon	971,012	0.076321%
Litchfield	2,678,921	0.210561%
Madison	7,645,451	0.600927%
Manchester	16,002,900	1.257816%
Mansfield	3,537,005	0.278006%
Marlborough	1,248,424	0.098125%

*The accompanying notes are an integral part of this schedule.*

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## SCHEDULE I – EMPLOYER ALLOCATIONS (CONTINUED)

AS OF AND FOR THE YEAR ENDED JUNE 30, 2018

Employer	Expected Employer Contribution Effort for Allocation Purposes	Employer Allocation Percentage
Meriden	\$ 17,382,917	1.366284%
Middletown	11,304,721	0.888542%
Milford	15,945,462	1.253301%
Monroe	8,555,369	0.672445%
Montville	5,784,261	0.454638%
Naugatuck	9,161,951	0.720122%
New Britain	22,698,826	1.784110%
New Canaan	12,944,481	1.017426%
New Fairfield	6,131,469	0.481929%
New Hartford	1,001,137	0.078689%
New Haven	46,537,839	3.657839%
Newington	10,062,923	0.790938%
New London	7,035,869	0.553014%
New Milford	8,637,676	0.678915%
Newtown	10,753,263	0.845198%
Norfolk	261,240	0.020533%
North Branford	4,234,432	0.332823%
North Canaan	619,300	0.048676%
North Haven	7,929,780	0.623275%
North Stonington	1,958,420	0.153930%
Norwalk	28,717,306	2.257158%
Norwich	6,112,755	0.480458%
NFA	5,040,281	0.396162%
Old Saybrook	3,775,299	0.296736%
Orange	3,032,878	0.238382%
Oxford	4,020,205	0.315985%
Plainfield	4,501,286	0.353798%
Plainville	5,457,887	0.428986%
Plymouth	3,125,057	0.245627%
Pomfret	875,384	0.068804%
Portland	3,008,170	0.236440%
Preston	1,096,533	0.086187%
Putnam	2,711,780	0.213144%
Redding	3,123,515	0.245506%
RSD 1	2,045,012	0.160736%
RSD 4	2,219,325	0.174437%

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# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## SCHEDULE I – EMPLOYER ALLOCATIONS (CONTINUED)

**AS OF AND FOR THE YEAR ENDED JUNE 30, 2018**

Employer	Expected Employer Contribution Effort for Allocation Purposes	Employer Allocation Percentage
RSD 5	\$ 6,080,673	0.477936%
RSD 6	2,463,699	0.193645%
RSD 7	2,466,688	0.193880%
RSD 8	3,600,371	0.282986%
Ridgefield	13,455,113	1.057562%
Rocky Hill	6,485,172	0.509730%
Salem	970,664	0.076293%
Salisbury	773,548	0.060800%
Scotland	335,634	0.026381%
Seymour	5,001,684	0.393129%
Sharon	525,687	0.041319%
Shelton	11,539,951	0.907031%
Sherman	1,044,188	0.082072%
Simsbury	10,728,134	0.843223%
Somers	3,514,678	0.276251%
Southington	13,702,615	1.077015%
S. Windsor	10,586,662	0.832104%
Sprague	603,528	0.047437%
Stafford	3,541,639	0.278370%
Stamford	43,188,379	3.394574%
SDE	10,865,982	0.854058%
DCF Recq Home	479,728	0.037706%
Sterling	705,063	0.055417%
Stonington	5,068,255	0.398361%
Stratford	16,491,399	1.296211%
Suffield	5,607,373	0.440735%
Thomaston	2,052,900	0.161356%
Thompson	2,305,670	0.181224%
Tolland	5,074,397	0.398844%
Torrington	8,991,978	0.706763%
Trumbull	16,902,321	1.328510%
Union	188,001	0.014777%
Vernon	7,765,665	0.610375%
Voluntown	715,002	0.056199%
Wallingford	15,998,528	1.257472%
Waterbury	36,050,885	2.833572%

*The accompanying notes are an integral part of this schedule.*



# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## SCHEDULE I – EMPLOYER ALLOCATIONS (CONTINUED)

**AS OF AND FOR THE YEAR ENDED JUNE 30, 2018**

Employer	Expected Employer Contribution Effort for Allocation Purposes	Employer Allocation Percentage
Waterford	\$ 7,229,141	0.568205%
Watertown	5,510,347	0.433109%
Westbrook	2,479,519	0.194888%
W. Hartford	23,556,404	1.851515%
West Haven	13,305,331	1.045789%
Weston	7,081,527	0.556603%
Westport	17,422,366	1.369385%
Wethersfield	8,360,672	0.657142%
Willington	1,159,491	0.091135%
Wilton	11,663,084	0.916709%
Winchester	1,560,725	0.122672%
Windham	7,697,498	0.605017%
Windsor	9,674,179	0.760383%
Windsor Locks	4,932,894	0.387722%
Winsted/Gilbert	1,245,951	0.097931%
Wolcott	5,052,862	0.397151%
Woodbridge	2,038,112	0.160194%
Woodstock	1,514,475	0.119037%
Woodstock Ad	2,411,968	0.189579%
UCONN	458,931	0.036072%
RSD 9	2,875,523	0.226014%
RSD 10	5,507,961	0.432922%
Supervision District	1,056,753	0.083060%
NWCTC	122,915	0.009661%
MCTC	329,725	0.025916%
Norwalk CTC	190,823	0.014999%
WCSU	377,376	0.029661%
CCSU	928,765	0.073000%
ESCU	269,020	0.021145%
SCSU	818,748	0.064353%
RSD 11	702,643	0.055227%
CCTC	36,811	0.002893%
Hou CTC	338,224	0.026584%
Naug CTC	390,810	0.030717%
MCTC	108,245	0.008508%

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# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## SCHEDULE I – EMPLOYER ALLOCATIONS (CONTINUED)

**AS OF AND FOR THE YEAR ENDED JUNE 30, 2018**

Employer	Expected Employer Contribution Effort for Allocation Purposes	Employer Allocation Percentage
Ed Connection	\$ 784,976	0.061699%
RSD 12	2,575,197	0.202409%
Gateway CTC	528,553	0.041544%
RSD 13	4,775,327	0.375337%
RSD 14	4,551,519	0.357746%
CCI Cheshire	17,083	0.001343%
Shared Svcs	489,288	0.038458%
CREC	24,533,680	1.928329%
RSD 15	8,899,417	0.699487%
RSD 16	4,884,750	0.383938%
TRCC (Mohegan)	140,700	0.011059%
Tunxis CTC	158,537	0.012461%
QVCC	45,921	0.003609%
Odyssey	572,225	0.044976%
CES	3,623,843	0.284831%
ACES	6,771,094	0.532203%
Project Learn	4,842,521	0.380618%
RSD 17	4,955,759	0.389519%
Asnun CTC	49,880	0.003921%
RSD 18	3,847,461	0.302408%
EASTCONN	2,190,141	0.172143%
BSBE	334,147	0.026264%
RSD 19	3,010,002	0.236584%
UCONN Health	333,071	0.026179%
CCI Niantic	21,303	0.001674%
Children's CTR	335,729	0.026388%
Bridges Academy	455,049	0.035767%
Common Ground	406,821	0.031976%
Explorations	296,843	0.023332%
Intergrated Day	543,022	0.042681%
Isaac	494,548	0.038871%
Jumoke Academy	952,067	0.074832%
Side by Side	351,107	0.027597%

*The accompanying notes are an integral part of this schedule.*

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## SCHEDULE I – EMPLOYER ALLOCATIONS (CONTINUED)

AS OF AND FOR THE YEAR ENDED JUNE 30, 2018

Employer	Expected Employer Contribution Effort for Allocation Purposes	Employer Allocation Percentage
Trailblazers Academy	\$ 296,146	0.023277%
New Beginnings	689,843	0.054221%
Elm City CP	490,774	0.038574%
Stamford Academy	189,168	0.014868%
Park City	501,676	0.039431%
AF Bridgeport Academy	466,380	0.036657%
SERC	31,979	0.002514%
AF Hartford Acad	1,054,420	0.082877%
Brass City	196,706	0.015461%
Path Academy	180,625	0.014197%
Great Oaks Charter	200,209	0.015736%
Booker T. Washington(BTW)	311,762	0.024504%
Capitol Prep Harbor	326,426	0.025657%
Stamford Charter Excellence	197,056	0.015488%
Total	<u>\$ 1,272,277,000</u>	<u>100.000000%</u>

*The accompanying notes are an integral part of this schedule.*

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## SCHEDULE II – PENSION AMOUNTS BY EMPLOYER

**AS OF AND FOR THE YEAR ENDED JUNE 30, 2018**

Employer	State of Connecticut's Proportionate Share of the Net Pension Liability Associated with the Employer	Employer Pension Expense and Revenue
Andover	\$ 5,973,789	\$ 670,452
Ansonia	43,383,840	4,869,069
Ashford	10,071,567	1,130,355
Avon	89,755,368	10,073,454
Barkhamsted	5,298,582	594,672
Berlin	70,217,500	7,880,674
Bethany	10,103,131	1,133,898
Bethel	65,901,106	7,396,235
Highville Chtr	6,019,124	675,540
Bloomfield	47,360,415	5,315,370
Bolton	21,638,197	2,428,505
Bozrah	6,033,212	677,121
Branford	84,369,802	9,469,019
Bridgeport	387,478,686	43,487,635
Bristol	181,099,594	20,325,229
Brookfield	64,203,987	7,205,763
Brooklyn	18,317,166	2,055,778
Cldrn Ctr Com Prog	958,518	107,577
Canaan	2,824,146	316,961
Canterbury	11,326,372	1,271,185
Canton	38,201,520	4,287,446
Chaplin	4,776,556	536,084
Cheshire	108,202,716	12,143,843
Chester	4,852,854	544,647
Clinton	51,355,496	5,763,747
Colchester	59,480,808	6,675,670
Amistad Acd	8,252,646	926,214
Colebrook	3,007,579	337,548
Columbia	13,545,762	1,520,272
Cornwall	3,268,285	366,807
Coventry	41,840,756	4,695,886
Cromwell	45,353,455	5,090,124
Danbury	244,202,221	27,407,384
Darien	146,778,802	16,473,327
Deep River	5,320,168	597,095
Derby	30,157,616	3,384,659

*The accompanying notes are an integral part of this schedule.*

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## SCHEDULE II – PENSION AMOUNTS BY EMPLOYER (CONTINUED)

**AS OF AND FOR THE YEAR ENDED JUNE 30, 2018**

Employer	State of Connecticut's Proportionate Share of the Net Pension Liability Associated with the Employer	Employer Pension Expense and Revenue
Eastford	\$ 4,182,906	\$ 469,457
East Granby	26,311,704	2,953,024
East Haddam	30,485,833	3,421,496
East Hampton	50,718,039	5,692,204
East Hartford	173,492,584	19,471,477
East Haven	64,568,622	7,246,687
East Lyme	68,519,467	7,690,099
Easton	23,815,711	2,672,893
East Windsor	34,628,569	3,886,445
Ellington	60,874,706	6,832,110
Enfield	120,822,666	13,560,209
Essex	6,967,728	782,004
Fairfield	277,598,127	31,155,484
Farmington	106,208,867	11,920,068
Franklin	4,164,443	467,385
Glastonbury	152,253,528	17,087,768
Granby	45,049,157	5,055,972
Greenwich	313,529,134	35,188,105
Griswold	40,555,140	4,551,598
Groton	118,214,690	13,267,510
Guilford	85,138,383	9,555,279
Hamden	150,633,871	16,905,990
Hampton	3,471,874	389,657
Hartford	445,642,471	50,015,492
Hartland	5,126,395	575,347
Hebron	17,779,161	1,995,397
Kent	6,324,263	709,787
Killingly	51,589,365	5,789,995
Lebanon	26,276,501	2,949,073
Ledyard	57,450,149	6,447,764
Lisbon	10,046,917	1,127,589
Litchfield	27,718,392	3,110,900
Madison	79,106,330	8,878,288
Manchester	165,579,605	18,583,385
Mansfield	36,596,855	4,107,350
Marlborough	12,917,254	1,449,734

*The accompanying notes are an integral part of this schedule.*

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## SCHEDULE II – PENSION AMOUNTS BY EMPLOYER (CONTINUED)

**AS OF AND FOR THE YEAR ENDED JUNE 30, 2018**

Employer	State of Connecticut's Proportionate Share of the Net Pension Liability Associated with the Employer	Employer Pension Expense and Revenue
Meriden	\$ 179,858,436	\$ 20,185,931
Middletown	116,968,248	13,127,619
Milford	164,985,296	18,516,684
Monroe	88,521,118	9,934,931
Montville	59,848,879	6,716,979
Naugatuck	94,797,335	10,639,326
New Britain	234,861,347	26,359,036
New Canaan	133,934,601	15,031,792
New Fairfield	63,441,386	7,120,175
New Hartford	10,358,617	1,162,572
New Haven	481,520,026	54,042,114
Newington	104,119,553	11,685,580
New London	72,799,078	8,170,410
New Milford	89,372,736	10,030,510
Newtown	111,262,401	12,487,238
Norfolk	2,703,008	303,365
North Branford	43,813,034	4,917,239
North Canaan	6,407,801	719,162
North Haven	82,048,238	9,208,465
North Stonington	20,263,478	2,274,217
Norwalk	297,133,647	33,348,001
Norwich	63,247,758	7,098,443
NFA	52,151,029	5,853,031
Old Saybrook	39,062,448	4,384,070
Orange	31,380,736	3,521,933
Oxford	41,596,457	4,668,467
Plainfield	46,574,127	5,227,123
Plainville	56,471,932	6,337,976
Plymouth	32,334,497	3,628,976
Pomfret	9,057,464	1,016,540
Portland	31,125,086	3,493,241
Preston	11,345,659	1,273,350
Putnam	28,058,377	3,149,057
Redding	32,318,538	3,627,185
RSD 1	21,159,427	2,374,772
RSD 4	22,963,023	2,577,194

*The accompanying notes are an integral part of this schedule.*

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## SCHEDULE II – PENSION AMOUNTS BY EMPLOYER (CONTINUED)

**AS OF AND FOR THE YEAR ENDED JUNE 30, 2018**

Employer	State of Connecticut's Proportionate Share of the Net Pension Liability Associated with the Employer	Employer Pension Expense and Revenue
RSD 5	\$ 62,915,809	\$ 7,061,188
RSD 6	25,491,522	2,860,973
RSD 7	25,522,449	2,864,444
RSD 8	37,252,502	4,180,935
Ridgefield	139,218,030	15,624,764
Rocky Hill	67,101,102	7,530,913
Salem	10,043,313	1,127,184
Salisbury	8,003,784	898,283
Scotland	3,472,756	389,756
Seymour	51,751,673	5,808,211
Sharon	5,439,209	610,455
Shelton	119,402,141	13,400,780
Sherman	10,804,052	1,212,564
Simsbury	111,002,388	12,458,057
Somers	36,365,843	4,081,423
Southington	141,778,900	15,912,176
S. Windsor	109,538,605	12,293,773
Sprague	6,244,614	700,848
Stafford	36,644,803	4,112,732
Stamford	446,863,667	50,152,550
SDE	112,428,682	12,618,133
DCF Recq Home	4,963,676	557,085
Sterling	7,295,185	818,756
Stonington	52,440,472	5,885,516
Stratford	170,634,027	19,150,654
Suffield	58,018,646	6,511,568
Thomaston	21,241,051	2,383,933
Thompson	23,856,423	2,677,462
Tolland	52,504,028	5,892,649
Torrington	93,038,640	10,441,943
Trumbull	174,885,776	19,627,838
Union	1,945,221	218,317
Vernon	80,350,171	9,017,887
Voluntown	7,398,020	830,297
Wallingford	165,534,364	18,578,307
Waterbury	373,013,095	41,864,128

*The accompanying notes are an integral part of this schedule.*

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## SCHEDULE II – PENSION AMOUNTS BY EMPLOYER (CONTINUED)

**AS OF AND FOR THE YEAR ENDED JUNE 30, 2018**

Employer	State of Connecticut's Proportionate Share of the Net Pension Liability Associated with the Employer	Employer Pension Expense and Revenue
Waterford	\$ 74,798,836	\$ 8,394,848
Watertown	57,014,729	6,398,896
Westbrook	25,655,212	2,879,344
W. Hartford	243,734,575	27,354,899
West Haven	137,668,256	15,450,829
Weston	73,271,494	8,223,430
Westport	180,266,606	20,231,741
Wethersfield	86,506,620	9,708,839
Willington	11,997,078	1,346,460
Wilton	120,676,176	13,543,768
Winchester	16,148,584	1,812,393
Windham	79,644,856	8,938,728
Windsor	100,097,275	11,234,150
Windsor Locks	51,039,909	5,728,328
Winsted/Gilbert	12,891,663	1,446,861
Wolcott	52,281,204	5,867,641
Woodbridge	21,088,036	2,366,759
Woodstock	15,670,048	1,758,686
Woodstock Ad	24,956,271	2,800,900
UCONN	4,748,488	532,934
RSD 9	29,752,608	3,339,204
RSD 10	56,990,047	6,396,126
Supervision District	10,934,064	1,227,155
NWCTC	1,271,783	142,735
MCTC	3,411,619	382,894
Norwalk CTC	1,974,415	221,593
WCSU	3,904,656	438,229
CCSU	9,609,794	1,078,530
ESCU	2,783,510	312,400
SCSU	8,471,465	950,772
RSD 11	7,270,145	815,945
CCTC	380,879	42,747
Hou CTC	3,499,548	392,762
Naug CTC	4,043,656	453,829
MCTC	1,119,993	125,699

*The accompanying notes are an integral part of this schedule.*



# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## SCHEDULE II – PENSION AMOUNTS BY EMPLOYER (CONTINUED)

**AS OF AND FOR THE YEAR ENDED JUNE 30, 2018**

Employer	State of Connecticut's Proportionate Share of the Net Pension Liability Associated with the Employer	Employer Pension Expense and Revenue
Ed Connection	\$ 8,122,034	\$ 911,555
RSD 12	26,645,180	2,990,451
Gateway CTC	5,468,854	613,782
RSD 13	49,409,595	5,545,354
RSD 14	47,093,885	5,285,456
CCI Cheshire	176,752	19,837
Shared Svcs	5,062,590	568,186
CREC	253,846,302	28,489,762
RSD 15	92,080,926	10,334,457
RSD 16	50,541,776	5,672,421
TRCC (Mohegan)	1,455,805	163,388
Tunxis CTC	1,640,355	184,101
Odyssey	5,920,726	664,497
CES	37,495,363	4,208,192
ACES	70,059,492	7,862,940
Project Learn	50,104,836	5,623,382
RSD 17	51,276,498	5,754,881
Asnun CTC	516,103	57,923
RSD 18	39,809,105	4,467,869
EASTCONN	22,661,061	2,543,304
BSBE	3,457,367	388,028
RSD 19	31,144,040	3,495,368
UCONN Health	3,446,236	386,779
CCI Niantic	220,423	24,739
Children's CTR	3,473,736	389,865
Bridges Academy	4,708,327	528,426
Common Ground	4,209,316	472,421
Explorations	3,071,390	344,709
Intergrated Day	5,618,572	630,585
Isaac	5,117,014	574,294
Jumoke Academy	9,850,897	1,105,589
Side by Side	3,632,851	407,723

*The accompanying notes are an integral part of this schedule.*

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## SCHEDULE II – PENSION AMOUNTS BY EMPLOYER (CONTINUED)

**AS OF AND FOR THE YEAR ENDED JUNE 30, 2018**

Employer	State of Connecticut's Proportionate Share of the Net Pension Liability Associated with the Employer	Employer Pension Expense and Revenue
Trailblazers Academy	\$ 3,064,182	\$ 343,900
New Beginnings	7,137,703	801,081
Elm City CP	5,077,968	569,912
Stamford Academy	1,957,296	219,672
Park City	5,190,765	582,572
AF Bridgeport Academy	4,825,562	541,584
SERC	330,881	37,136
AF Hartford Acad	10,909,929	1,224,447
Brass City	2,035,283	228,425
Path Academy	1,868,902	209,751
Great Oaks Charter	2,071,531	232,493
Booker T. Washington(BTW)	3,225,753	362,034
Capitol Prep Harbor	3,377,477	379,062
Stamford Charter Excellence	2,038,908	228,831
<b>Total</b>	<b>\$ 13,164,059,000</b>	<b>\$ 1,477,433,000</b>

*The accompanying notes are an integral part of this schedule.*

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

AS OF AND FOR THE YEAR ENDED JUNE 30, 2018

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### NOTE 1 - ORGANIZATION

The Connecticut Teachers' Retirement System (TRS or the Plan) is the public pension plan offered by the State of Connecticut (the State) to provide retirement, disability, survivorship and health insurance benefits for Connecticut public school teachers and their beneficiaries. The Plan is governed by Connecticut Statute Title 10, Chapter 167a of the Connecticut General Statutes.

TRS is a multiemployer pension plan administered by the Connecticut State Teachers' Retirement Board. The Connecticut State Teachers' Retirement Board (TRB) is responsible for the administration of TRS. The State Treasurer is responsible for investing TRS funds for the exclusive benefit of TRS members.

### NOTE 2 - DESCRIPTION OF THE PLAN

#### *PLAN DESCRIPTION*

Teachers, principals, superintendents or supervisors engaged in the service of public schools are provided with pensions through the Connecticut Teachers' Retirement System - a cost sharing multi-employer defined benefit pension plan administered by the TRB. Chapter 167a of the State Statutes grants authority to establish and amend the benefit terms to the TRB. TRS issues a publicly available financial report that can be obtained at [www.ct.gov](http://www.ct.gov).

#### *BENEFIT PROVISIONS*

The Plan provides retirement, disability and death benefits. Employees are eligible to retire at age 60 with 20 years of credited service in Connecticut, or 35 years of credited service including at least 25 years of service in Connecticut.

*Normal Retirement:* Retirement benefits for the employees are calculated as 2% of the average annual salary times the years of credited service (maximum benefit is 75% of average annual salary during the 3 years of highest salary).

In addition, amounts derived from the accumulation of the 6% contributions made prior to July 1, 1989 and voluntary contributions are payable.

*Early Retirement:* Employees are eligible after 25 years of credited service with a minimum of 20 years of Connecticut service, or age 55 with 20 years of credited service with a minimum of 15 years of Connecticut service. Benefit amounts are reduced by 6% per year for the first 5 years preceding normal retirement age and 4% per year for the next 5 years preceding normal retirement age. Effective July 1, 1999, the reduction for individuals with 30 or more years of service is 3% per year by which retirement precedes normal retirement date.

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

AS OF AND FOR THE YEAR ENDED JUNE 30, 2018

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### NOTE 2 - DESCRIPTION OF THE PLAN (CONTINUED)

#### *BENEFIT PROVISIONS (CONTINUED)*

*Minimum Benefit:* Effective January 1, 1999, Public Act 98-251 provides a minimum monthly benefit of \$1,200 to teachers who retire under the normal retirement provisions and who have completed at least 25 years of full time Connecticut service at retirement.

*Disability Retirement:* Employees are eligible for service-related disability benefits regardless of length of service. Five years of credited service is required to be eligible for non-service related disability. Disability benefits are calculated as 2% per year of service times the average of the highest three years of pensionable salary, as defined per the Plan, but not less than 15%, nor more than 50%. In addition, disability benefits under this Plan (without regard to cost-of-living adjustments) plus any initial award of Social Security benefits and workers' compensation cannot exceed 75% of average annual salary.

A plan member who leaves service and has attained 10 years of service will be entitled to 100% of the accrued benefit as of the date of termination of covered employment. Benefits are payable at age 60, and early retirement reductions are based on the number of years of service the member would have had if they had continued work until age 60.

*Pre-Retirement Death Benefit:* The Plan also offers a lump-sum return of contributions with interest or surviving spouse benefit depending on length of service.

#### *CONTRIBUTIONS*

##### *STATE OF CONNECTICUT*

Per Connecticut General Statutes Section 10-183z (which reflects Public Act 79-436 as amended), contribution requirements of active employees and the State are amended and certified by the TRB and appropriated by the General Assembly. The contributions are actuarially determined as an amount that, when combined with employee contributions and investment earnings, is expected to finance the costs of the benefits earned by employees during the year, with any additional amounts to finance any unfunded accrued liability.

##### *EMPLOYER (SCHOOL DISTRICTS)*

School district employers are not required to make contributions to the Plan.

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

AS OF AND FOR THE YEAR ENDED JUNE 30, 2018

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### NOTE 2 - DESCRIPTION OF THE PLAN (CONTINUED)

#### *CONTRIBUTIONS (CONTINUED)*

##### *EMPLOYEES*

Effective July 1, 1992, each teacher is required to contribute 6% of pensionable salary for the pension benefit.

Effective January 1, 2018, the required contribution increased to 7% of pensionable salary.

##### *ADMINISTRATIVE EXPENSES*

Administrative expenses of the Plan are to be paid by the General Assembly per Section 10-183r of the Connecticut General Statutes.

### NOTE 3 - RELATIONSHIP TO FINANCIAL STATEMENTS

The components associated with pension expense and deferred inflows and outflows of resources have been determined based on fiduciary net position as audited by the State of Connecticut Auditors of Public Accounts as part of the State of Connecticut Comprehensive Annual Financial Report as of and for the year ended June 30, 2018. The net pension liability at June 30, 2018 has been calculated using the audited amounts. TRS is included in the State of Connecticut audit as a pension trust fund.

### NOTE 4 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

#### *BASIS OF PRESENTATION*

The schedule of employer allocations and schedule of pension amounts by employer (the schedules) are prepared on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America. The schedules present amounts that are elements of financial statements of TRS or its participating employers. Accordingly, they do not purport to be a complete presentation of the net position or changes in net position of TRS or its participating employers.

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

AS OF AND FOR THE YEAR ENDED JUNE 30, 2018

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### NOTE 4 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

#### *BASIS OF PRESENTATION (CONTINUED)*

GASB Statement No. 68, *Accounting and Financial Reporting for Pensions - an amendment of GASB Statement No. 27*, requires participating employers to recognize their proportional share of the collective net pension liability, deferred inflows and outflows of resources and pension expense. The schedules have been prepared to provide employers with their proportional share of these amounts. Contributions remitted by the State are recognized when legally due, based upon statutory requirements.

#### *USE OF ESTIMATES*

The preparation of the schedules requires management to make a number of estimates and assumptions relating to the reported amounts. Due to the inherent nature and uncertainty of these estimates, actual results could differ, and the differences may be material.

#### *ALLOCATION METHODOLOGY*

The schedule of employer allocations was calculated based upon the 2018 expected contribution effort for each participating employer. The employer allocations were then applied to the net pension liability and pension expense to determine the amount applicable to each employer.

Based upon the employee contributions made by the employees of each employer, as compared to the total employee contributions, an employer allocation percentage is calculated to six decimal places and is used to allocate the elements noted above.

### NOTE 5 - COLLECTIVE NET PENSION LIABILITY OF PARTICIPATING EMPLOYERS

The components of the current year collective net pension liability of participating employers as of June 30, 2018 were as follows:

Employers' total pension liability	\$ 31,110,898,000
Less: Plan fiduciary net position	<u>17,946,839,000</u>
Total employers' net pension liability	<u>\$ 13,164,059,000</u>
Fiduciary net position as a percentage of total pension liability	<u>57.69%</u>

The collective total pension liability is based upon the June 30, 2018 actuarial valuation.

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

AS OF AND FOR THE YEAR ENDED JUNE 30, 2018

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### NOTE 6 - ACTUARIAL ASSUMPTIONS AND RELATED DISCLOSURES

#### *ACTUARIAL ASSUMPTIONS*

The total pension liability was determined by an actuarial valuation as of June 30, 2018 using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75%
Salary increase	3.25-6.50%, including inflation
Investment rate of return	8.00%, net of pension plan investment expense, including inflation
Administrative expenses	\$0 assumption as expenses are paid for by the General Assembly

Mortality rates were based on the RPH-2014 White Collar table with employee and annuitant rates blended from ages 50 to 80, projected to the year 2020 using the BB improvement scale.

Future cost-of-living increases for teachers who retired prior to September 1, 1992, are made in accordance with increases in the Consumer Price Index, with a minimum of 3% and a maximum of 5% per annum. For teachers who were members of the Teachers' Retirement System before July 1, 2007, and retire on or after September 1, 1992, pension benefit adjustments are made that are consistent with those provided for Social Security benefits on January 1 of the year granted, with a maximum of 6% per annum. If the return on assets in the previous year was less than 8.5%, the maximum increase is 1.5%. For teachers who were members of the Teachers' Retirement System after July 1, 2007, pension benefit adjustments are made that are consistent with those provided for Social Security benefits on January 1 of the year granted, with a maximum of 5% per annum. If the return on assets in the previous year was less than 11.5%, the maximum increase is 3%, and if the return on the assets in the previous year was less than 8.5%, the maximum increase is 1.0%.

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

AS OF AND FOR THE YEAR ENDED JUNE 30, 2018

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### NOTE 6 - ACTUARIAL ASSUMPTIONS AND RELATED DISCLOSURES (CONTINUED)

#### *LONG-TERM RATE OF RETURN*

The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimates of arithmetic real rates of return for each major asset class included in the Plan's target asset allocation are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Large cap U.S. equities	21.0%	5.8%
Developed non-U.S. equities	18.0%	6.6%
Emerging markets (non-U.S.)	9.0%	8.3%
Real estate	7.0%	5.1%
Private equity	11.0%	7.6%
Alternative investments	8.0%	4.1%
Core fixed income	7.0%	1.3%
High yield bonds	5.0%	3.9%
Emerging market bond	5.0%	3.7%
Inflation linked bond fund	3.0%	1.0%
Cash	<u>6.0%</u>	0.4%
	<u>100.0%</u>	



# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

AS OF AND FOR THE YEAR ENDED JUNE 30, 2018

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### NOTE 6 - ACTUARIAL ASSUMPTIONS AND RELATED DISCLOSURES (CONTINUED)

#### *DISCOUNT RATE*

The discount rate used to measure the total pension liability was 8.00%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that the State contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

#### *SENSITIVITY OF THE NET PENSION LIABILITY TO CHANGES IN THE DISCOUNT RATE*

The following presents the net pension liability, calculated using the discount rate of 8.00% as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate:

	1% Decrease (7.00%)	Current Discount (8.00%)	1% Increase (9.00%)
Net pension liability	\$16,636,976,000	\$13,164,059,000	\$10,227,117,000

### NOTE 7 - COMPONENTS OF SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

#### *NET PENSION LIABILITY*

The participating employer's share of the collective net pension liability is calculated using the employer allocation percentage.

#### *DIFFERENCE BETWEEN EXPECTED AND ACTUAL EXPERIENCE*

The difference between expected and actual experience for economic and demographic factors is amortized over the average of the expected remaining service life of active and inactive plan members. The weighted-average is 6.30 years. In the year that the difference occurs, one year is amortized and recognized as pension expense. The balance is recorded as a deferred inflow or outflow and recognized in future periods.

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

AS OF AND FOR THE YEAR ENDED JUNE 30, 2018

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### NOTE 7 - COMPONENTS OF SCHEDULE OF PENSION AMOUNTS BY EMPLOYER (CONTINUED)

#### *DIFFERENCE BETWEEN EXPECTED AND ACTUAL EXPERIENCE (CONTINUED)*

The collective difference between expected and actual experience as of June 30, 2018 is \$543,452,000. For the year ended June 30, 2018, no amortization was recognized as pension expense.

#### *CHANGES IN ACTUARIAL ASSUMPTIONS*

The collective amount due to changes in actuarial assumptions as of June 30, 2018 is \$1,238,217,000. For the year ended June 30, 2018, no amortization was recognized as pension expense.

#### *CHANGES IN EMPLOYER PROPORTIONAL SHARE*

For the year ended June 30, 2018 there were no changes to the employer proportional share and no impact to the individual employers and each employer's proportional share.

#### *NET DIFFERENCE BETWEEN PROJECTED AND ACTUAL INVESTMENT EARNINGS ON PENSION PLAN INVESTMENTS*

Deferred outflows and inflows related to differences between projected and actual earnings on plan investments are netted and amortized over a closed five-year period. The collective amount of the net difference between projected and actual investment earnings compared to the Plan's expected rate of return of 8.00% was \$243,425,000. Amortization of the preceding net difference which relates to projected earnings on plan investments of \$1,354,249,000 is recognized within pension expense and the remaining amount is shown as a deferred outflow of resources.

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

**AS OF AND FOR THE YEAR ENDED JUNE 30, 2018**

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### NOTE 7 - COMPONENTS OF SCHEDULE OF PENSION AMOUNTS BY EMPLOYER (CONTINUED)

#### *DEFERRED OUTFLOWS AND DEFERRED INFLOWS OF RESOURCES*

The cumulative net amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in future pension expense as follows:

	Collective Deferred Outflows of Resources	Collective Deferred Inflows of Resources
Differences between expected and actual experience	\$ --	\$ 543,452,000
Changes of assumptions	1,238,217,000	--
Net difference between projected and actual earnings on plan investments	243,425,000	--
	<u>\$ 1,481,642,000</u>	<u>\$ 543,452,000</u>
Net deferred outflows and inflows	<u>\$ 938,190,000</u>	
Amounts to be recognized in subsequent fiscal years:		
2019	\$ 490,835,000	
2020	310,485,000	
2021	37,060,000	
2022	181,537,000	
2023	(62,868,000)	
2024	(18,859,000)	
	<u>\$ 938,190,000</u>	

The above amounts do not include the deferred outflows/inflows of resources for employer contributions made subsequent to the measurement date. These amounts should be calculated and recorded by each participating employer.

# CONNECTICUT TEACHERS' RETIREMENT SYSTEM

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

AS OF AND FOR THE YEAR ENDED JUNE 30, 2018

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### NOTE 8 - COLLECTIVE PENSION EXPENSE

Collective pension expense includes certain current period changes in the collective net pension liability, projected earnings on pension plan investments and the amortization of deferred outflows of resources and deferred inflows of resources for the current period. The collective pension expense was \$1,477,433,000 calculated as follows:

Service cost	\$ 465,207,000
Interest on the total pension liability	2,371,168,000
Expensed portion of current period difference between expected and actual experience in the total pension liability	(62,868,000)
Expensed portion of current period changes of assumptions	28,036,000
Member contributions	(312,150,000)
Projected earnings on plan investments	(1,354,249,000)
Expensed portion of current period differences between projected and actual earnings on plan investments	25,864,000
Other	2,753,000
Recognition of beginning deferred outflows of resources as pension expense	368,856,000
Recognition of beginning deferred inflows of resources as pension expense	<u>(55,184,000)</u>
Collective pension expense	<u>\$ 1,477,433,000</u>

### NOTE 9 - SUBSEQUENT EVENT

The Plan has evaluated subsequent events through August 7, 2019, the date on which the schedules were available to be issued. No subsequent events have been identified requiring recognition or disclosure in the schedules and accompanying notes.

August 7, 2019

To the Retirement Board  
Connecticut Teachers' Retirement System  
765 Asylum Avenue  
Hartford, CT 06105

Re: Required communications between Marcum and Those Charged With Governance

In accordance with auditing standards generally accepted in the United States of America ("GAAS"), Marcum LLP ("Marcum" or the "Firm"), as auditors of the schedule of employer allocations and schedule of pension amounts by employer of Connecticut Teachers' Retirement System (the "Plan"), is required to determine that certain matters related to the conduct of our audit are communicated to the body or individuals (including management) charged with governance (hereafter referred to as the "Those Charged with Governance"). GAAS requires the auditor to ensure that Those Charged with Governance receive additional information regarding the scope and results of the audit that may assist them in overseeing the financial reporting and disclosure process, for which management is responsible.

1. The Auditor's Responsibility under U.S. Generally Accepted Auditing Standards

As stated in our engagement letter dated April 23, 2019, our responsibility, as described by professional standards, is to form and express an opinion about whether the schedule of employer allocations and schedule of pension amounts by employer of the Connecticut Teachers' Retirement System that have been prepared by management with your oversight are presented fairly, on all material respects, in conformity with accounting principles generally accepted in the United States of America ("GAAP"). Our audit of the schedule of employer allocations and schedule of pension amounts by employer does not relieve you or management of your respective responsibilities.

*Our responsibility, as prescribed by professional standards, is to plan and perform our audit to obtain reasonable, rather than absolute, assurance about whether the schedule of employer allocations and schedule of pension amounts by employer are free of material misstatement. An audit of such schedules includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control over financial reporting. Accordingly, as part of our audit, we considered the internal control of the Plan solely for the purpose of determining our audit procedures and not to provide any assurance concerning such internal control.*

*We are also responsible for communicating significant matters related to the audit that are, in our professional judgment, relevant to your responsibilities in overseeing the financial reporting process. However, we are not required to design procedures for the purpose of identifying other matters to communicate to you.*

## 2. Planned Scope and Timing of the Audit

The auditor should communicate an overview of the planned scope and timing of the audit. This communication may assist Those Charged With Governance in better understanding the consequences of the auditor's work for their oversight activities, discussing with the auditor issues of risk and materiality, and identifying any areas in which they may request the auditor to undertake additional procedures. Such communication may also assist the auditor in better understanding the Plan and its environment. Nevertheless, the auditor maintains sole responsibility to determine the overall audit strategy and the audit plan, including the nature, timing and extent of procedures necessary to obtain sufficient appropriate audit evidence.

*We conducted our audit consistent with the planned scope and timing we previously communicated to you. We would be pleased to meet with you to further discuss any of the following matters at your request:*

- *The allocation of responsibilities between Those Charged With Governance and management.*
- *The Plan's objectives and strategies, and the related business risks that may result in material misstatements.*
- *Matters you have identified that warrant particular attention during the audit, and any areas where you request additional procedures to be undertaken.*
- *Significant communications with regulators.*
- *Other matters you believe are relevant to the audit of the financial statements.*
- *The attitudes, awareness, and actions of Those Charged With Governance concerning (a) the Plan's internal control and its importance in the Plan, including how Those Charged With Governance oversee the effectiveness of internal control and (b) the detection or the possibility of fraud.*
- *The actions of Those Charged With Governance in response to developments in financial reporting, laws, accounting standards, corporate governance practices, and other related matters.*
- *The actions of Those Charged With Governance in response to previous communications with the auditor.*

## 3. Qualitative Aspects of the Plan's Significant Accounting Policies

*The plan's significant policies are described in note 4 to the financial schedules. There are no specific matters that we believe should be communicated to you. However, we would be pleased to meet with you at your convenience to discuss your significant accounting policies. Since the primary responsibility for establishing the Plan's accounting principles rests with*

*management, such a discussion should generally include the Plan's management as a participant.*

4. Management Judgments and Significant Accounting Estimates

*The most sensitive accounting estimates affecting the financial schedules relate to the actuarial assumptions and disclosures around the valuation to calculate the total employer pension allocations and liability.*

5. Financial Statement Disclosures

*The financial schedules' disclosures are neutral, consistent, and clear. The most sensitive disclosures affecting the Plan's financial schedules are described in Note 6 – Actuarial Assumptions and Related Disclosures.*

6. Significant Difficulties Encountered During the Audit

*We encountered no significant difficulties in dealing with management relating to the performance of the audit.*

7. Uncorrected and Corrected Misstatements

*We did not identify any material misstatements that resulted from the performance of our audit procedures.*

8. Disagreements with Management

For purposes of this letter, professional standards define a disagreement with management as a matter, whether or not resolved to our satisfaction, concerning a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, which could be significant to the Plan's financial statements or the auditor's report. However, a disagreement does not include a difference of opinion based on incomplete facts or preliminary information that is later resolved.

*There were no such disagreements.*

9. Representations Requested from Management

*See the attached copy of the representation letter from management.*

#### 10. Management Consultations with Other Accountants

When the auditor is aware that management has consulted with other accountants about significant accounting or auditing matters, the auditor's views about the subject of the consultation should be communicated to Those Charged With Governance.

*To our knowledge, no such consultations were made by management.*

#### 11. Other Audit Findings or Issues

The auditor should communicate any issues arising from the audit that are, in the auditor's professional judgment, significant and relevant to Those Charged With Governance regarding their oversight of the financial reporting process. In addition, the auditor should communicate to Those Charged With Governance any significant issues that were discussed or were the subject of correspondence with management.

*During the course of our audit, we reviewed the GASB Statement No. 68 Report for the Connecticut Teachers' Retirement System prepared as of June 30, 2018 and provided to us. While we did not note any material variances or differences in assumptions or calculations, we do have several best practice recommendations for Plan management to consider.*

- *Consider revising the long term rate of return of 8.00% for the 2019 actuarial valuations as 8.00% is somewhat high in today's environment.*
- *In the GASB 68 report, the description of the investment rate of return indicates that it is net of investment expenses, but the description of expenses indicates that the expected return is net of both administrative and investment expenses. The recommendation is a disclosure in the audit report of the administrative expense assumption as \$0.*
- *Actuarial Standards requires an allowance for longevity improvement when setting mortality assumption. The GASB 68 report uses a static projection on the mortality tables. It is more common to use a generational projection to eliminate the need for updating the table each time the margin approaches zero. The actuary may want to evaluate whether a table specific to Teachers is appropriate for future valuations.*
- *It is recommended that CMC should correct the statement on page 6 of the GASB 68 report related to Paragraph 80(e). It states there were no changes in benefit terms that affected the measurement of the TPL since the prior measurement date, when in fact, there was a change in plan provisions this year that increased the liability slightly.*

*During our audit testing of participant data and related documents, we noted two instances in which salaries were over-reported by \$249 and \$306, respectively, resulting in excess contributions being reported. The Connecticut Teachers' Retirement System will refund the excess contributions to the participants in 2019.*



12. Fraud or violations of Laws and Regulations

*There were no fraud or violations of laws and regulations that came to our attention during the course of our audit.*

13. Communicating Internal Control Related Matters

*Our consideration of internal control was for the limited purpose described in item # 1 above and would not necessarily identify all deficiencies in internal control that might be significant deficiencies or material weaknesses and therefore, there can be no assurance that all deficiencies, significant deficiencies, or material weaknesses have been identified.*

*A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis.*

14. Auditors' Independence

In order to issue an auditors' report, Marcum must be independent from the Plan in accordance with professional standards. The auditor may choose to communicate circumstances or relationships, such as financial interests, business or family relationships or nonaudit services provided or expected to be provided, that in the auditors' judgment may reasonably be thought to bear on independence, and that the auditor gave significant consideration to in reaching the conclusion that independence has not been impaired.

*We are not aware of any relationships between the Firm and the Plan that, in our professional judgment, may reasonably be thought to bear on our independence.*

This report is intended solely for the information and use of the Retirement Board, and management of the Plan and is not intended to be and should not be used by anyone other than these specified parties.

Very truly yours,

*Marcum LLP*