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GASB STATEMENT NO. 68 REPORT

FOR THE

CONNECTICUT STATE TEACHERS' RETIREMENT SYSTEM

PREPARED AS OF JUNE 30, 2017





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

April 25, 2018

Board of Directors
Connecticut State Teachers' Retirement System
765 Asylum Avenue
Hartford, CT 06105

Members of the Board:

Presented in this report is information to assist the Connecticut State Teachers' Retirement System in meeting the requirements of the Governmental Accounting Standards Board (GASB) Statement No. 68 and to identify the information to be provided by the actuary, Cavanaugh Macdonald Consulting (CMC). The information is presented for the period ending June 30, 2017 (the Measurement Date).

GASB Statement Number 68 establishes accounting and financial reporting requirements for governmental employers that provide pension benefits to their employees through a trust.

The annual actuarial valuation used as a basis for much of the information presented in this report, including the Net Pension Liability, was performed as of June 30, 2016. The valuation was based upon data, furnished by the Retirement System staff, for active, inactive and retired members along with pertinent financial information. The schedules contained within this report for participating employers are based on the expected contribution effort as measured June 30, 2016, the date of the latest biennial valuation.

The actuarial calculations were performed by qualified actuaries according to generally accepted actuarial procedures and methods. The calculations are based on the current provisions of the System, and on actuarial assumptions that are internally consistent and individually reasonable based on the actual experience of the System. In addition, the calculations were completed in compliance with the laws governing the System and, in our opinion, meet the requirements of GASB 68. The undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



Board of Directors
April 25, 2018
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These results are only for financial reporting and may not be appropriate for funding purposes or other types of analysis. Calculations for purposes other than satisfying the requirements of GASB 67 and GASB 68 may produce significantly different results. Future actuarial results may differ significantly from the current results presented in this report due to such factors as changes in plan experience or changes in economic or demographic assumptions.

Sincerely yours,

A handwritten signature in blue ink that reads 'John J. Garrett'.

John J. Garrett ASA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink that reads 'Cathy Turcot'.

Cathy Turcot
Principal and Managing Director

A handwritten signature in blue ink that reads 'Jonathan Craven'.

Jonathan Craven ASA, EA, FCA, MAAA
Consulting Actuary

A handwritten signature in blue ink that reads 'Ben Mobley'.

Ben Mobley ASA, FCA, MAAA
Senior Actuary



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**REPORT OF THE ANNUAL GASB STATEMENT NO. 68
REQUIRED INFORMATION FOR THE
EMPLOYERS PARTICIPATING IN THE
CONNECTICUT STATE TEACHERS' RETIREMENT SYSTEM**

PREPARED AS OF JUNE 30, 2017

SECTION I – INTRODUCTION

The Governmental Accounting Standards Board issued Statement No. 68 (GASB 68), *“Accounting and Financial Reporting For Pensions”* in June 2012. GASB 68’s effective date is for an employer’s fiscal year beginning after June 15, 2014. The Connecticut State Teachers’ Retirement System (System) is a cost-sharing multiple employer defined benefit pension plan with a special funding situation.

This report, prepared as of June 30, 2017 (the Measurement Date), presents information to assist the employers participating in System in meeting the requirements of GASB 68 for the fiscal year ending June 30, 2018 (Reporting Date). Much of the material provided in this report is based on the data, assumptions and results of the annual actuarial valuation of the System as of June 30, 2016. The results of that valuation were detailed in a report dated November 2, 2016.

The Net Pension Liability (NPL) shown in the GASB Statement No. 67 Report for the Connecticut State Teachers’ Retirement System prepared as of June 30, 2017 and submitted October 24, 2017 is the collective NPL used for purposes of GASB 68. Please refer to that report for the derivation of the collective NPL.

Pension Expense (PE) includes amounts for service cost (the normal cost under the Entry Age Normal actuarial cost method for the year), interest on the Total Pension Liability (TPL), changes in benefit structure, amortization of increases/decreases in liability due to actuarial experience and actuarial assumption changes, and amortization of investment gains/losses. The actuarial experience and assumption change impacts are amortized over the average expected remaining service life of the Plan membership as of the Measurement Date, and investment gains/losses are amortized over five years. The development of the collective PE is shown in Section IV.

The unamortized portions of each year’s experience, assumption changes and investment gains/losses are used to develop deferred inflows and outflows, which also must be included in the employer’s and non-employer contributing entities’ financial statements. The development of the collective deferred inflows and outflows is shown in Section III.



The State makes all contributions to the System on behalf of employees of the participating districts. Therefore, participating employers are considered to be in a special funding situation as defined by GASB 68 and the State is treated as a non-employer contributing entity in the System. Since the districts do not contribute directly to the System, there is no NPL or deferred inflows or outflows to report in the financial statements of the districts. However, the notes to the financial statements must disclose the portion of the non-employer contributing entities' total proportionate share of the collective NPL that is associated with the employer. In addition, each district must recognize the total PE associated with the district as well as revenue in an amount equal to the non-employer contributing entities' total proportionate share of the collective PE associated with the district. The State, as a non-employer contributing entity, would report the entire collective amounts of the NPL, Deferred Inflows and Outflows and PE.

Schedule A of this report shows the total amount of employer contributions from the State as support provided to the districts for the year ending June 30, 2017. Schedule A also shows the proportionate share percentages that have been determined based on these contributions.

Based on these percentages we have determined the proportionate share amounts of the NPL associated with each participating employer and the employer PE and revenue for State support for each participating employer. These amounts are shown in Schedule B.

Section II of this report is a summary of the principal results of the collective amounts under GASB 68. Section III provides the results of all the necessary calculations, presented in the order laid out in GASB 68 for note disclosure and Section V shows the Required Supplementary Information (RSI).



SECTION II - SUMMARY OF COLLECTIVE AMOUNTS
(\$ IN THOUSANDS)

Valuation Date (VD):	June 30, 2016
Measurement Date (MD):	June 30, 2017
Reporting Date (RD):	June 30, 2018
Single Equivalent Interest Rate (SEIR):	
Long-Term Expected Rate of Return	8.00%
Municipal Bond Index Rate at Measurement Date	3.56%
Fiscal Year in which Plan's Fiduciary Net Position is projected to be depleted from future benefit payments for current members	N/A
Single Equivalent Interest Rate	8.00%
Collective Net Pension Liability:	
Total Pension Liability (TPL)	\$ 30,636,646
Fiduciary Net Position (FNP)	<u>17,134,326</u>
Net Pension Liability (NPL = TPL – FNP)	\$ 13,502,320
FNP as a percentage of TPL	55.93%
Collective Pension Expense (PE):	\$1,561,824
Collective Deferred Outflows of Resources:	\$1,747,044
Collective Deferred Inflows of Resources:	\$265,437



SECTION III –NOTES TO FINANCIAL STATEMENTS

The material presented herein will follow the order presented in GASB 68. Paragraph numbers are provided for ease of reference. Amounts are shown in aggregate. Please refer to Schedule B of this report for the proportionate share of certain pension amounts as required by GASB 68.

Paragraphs 77 and 78(a)-(f): These paragraphs require information to be disclosed regarding the actuarial assumptions used to measure the TPL. The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an actuarial experience study for the period July 1, 2010 – June 30, 2015. The complete set of actuarial assumptions utilized in developing the TPL are outlined in Schedule D. The TPL was determined by an actuarial valuation as of June 30, 2016, using the following key actuarial assumptions:

Inflation	2.75 percent
Salary increases	3.25 – 6.50 percent, including inflation
Investment rate of return	8.00 percent, net of pension plan investment expense, including inflation

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, and further adjusted to grade in increases (5% for females and 8% for males) to rates over age 80 for the period after service retirement and for dependent beneficiaries as well as for active members. The RPH-2014 Disabled Mortality Table projected to 2017 with Scale BB is used for the period after disability retirement.

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 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 Investment	8.0	4.1
Fixed Income (Core)	7.0	1.3
High Yield Bonds	5.0	3.9
Emerging Market Bond	5.0	3.7
Inflation Linked Bonds	3.0	1.0
Cash	6.0	0.4

Discount rate. The discount rate used to measure the total pension liability was 8.00 percent. 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 State contributions will be made at the actuarially determined rates in future years. 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.

Paragraph 78 (g): This paragraph requires disclosure of the sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability of the System, calculated using the discount rate of 8.00 percent, as well as what the System’s net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (7.00 percent) or 1-percentage-point higher (9.00 percent) than the current rate (\$ thousands):

	1% Decrease (7.00%)	Current Discount Rate (8.00%)	1% Increase (9.00%)
Collective net pension liability	\$16,900,923	\$13,502,320	\$10,629,014



Paragraph 80(a): This paragraph requires disclosure of the employer's proportionate share of the collective NPL and if an employer has a special funding situation the portion of the non-employer contributing entities' proportional share of the collective NPL that is associated with the employer. These amounts are shown in Schedule B.

Paragraph 80(b): This paragraph requires disclosure of the employer's proportion (percentage) of the collective NPL and the changes in proportion since the prior measurement date. 100% of the collective NPL is allocated to the State.

Paragraph 80(c): June 30, 2016 is the actuarial valuation date upon which the TPL is based.

Paragraph 80(d) and (e): There were no changes in assumptions or benefits that affected the measurement of the TPL since the prior measurement date.

Paragraph 80(f): Not applicable.

Paragraph 80(g): Please see Section IV of this report for the development of the collective pension expense. The PE for each employer is shown in Schedule B.

Paragraph 80(h): Since certain expense items are amortized over closed periods each year, the deferred portions of these items must be tracked annually. If the amounts serve to reduce collective pension expense they are labeled deferred inflows. If they will increase collective pension expense they are labeled deferred outflows. The amortization of these amounts is accomplished on a level dollar basis, with no interest included in the deferred amounts. Experience gains/losses and the impact of changes in actuarial assumptions, if any, are amortized over the average expected remaining service life of the active and inactive Plan members at the beginning of the fiscal year. Investment gains and losses are amortized over a fixed five year period.



The table below provides a summary in the difference between projected and actual earnings on plan investments.

Investment Earnings (Gain)/Loss as of June 30, 2017		
(\$ thousands)		
a	Expected asset return rate	8.00%
b	Beginning of year market value assets (BOY)	\$15,594,872
c	End of year market value assets (EOY)	17,134,326
d	Expected return on BOY for plan year (a x b)	1,247,590
	External Cash Flow	
	Contributions - employer	1,012,162
	Contributions - member	288,251
	Refunds of contributions	0
	Benefits paid	(1,962,533)
	Admin expenses	0
	Other changes	<u>1,679</u>
e	Net cash flow	(660,441)
f	Expected return on net cash flow (a x 0.5 x e)	(26,418)
g	Projected earnings for plan year (d + f)	1,221,172
h	Net investment income (c - b - e)	2,199,895
	Investment earnings (gain)/loss (g -h)	(978,723)

*Other changes are comprised of participating employer contributions for Early Retirement Incentive Plans, service purchases, etc.

The table below provides a summary of the determination of the average expected remaining service life for the entire Plan membership determined at the beginning of the year.

Category	Number (1)	Average Years of Working Lifetime (2)
a. Active Members	50,877	12.60
b. Inactive Members	50,817	0.00
c. Total	101,694	
Weighted Average Years of Working Lifetime [(a1 * a2) + (b1 * b2)]/c1		6.30



The table below provides a summary of the collective deferred inflows and outflows as of the Measurement Date. 100% of these amounts are allocated to the State.

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$0	\$265,437
Changes of assumptions	1,563,208	0
Net difference between projected and actual earnings on plan investments	183,836	0
Employer contributions subsequent to the Measurement Date	<u>0</u>	<u>0</u>
Total	<u>\$1,747,044</u>	<u>\$265,437</u>

Paragraph 80(i): Collective amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in the collective pension expense as follows. 100% of these amounts are allocated to the State.

Deferred Amounts to be Recognized in Fiscal Years Following the Reporting Date:	
Year 1	\$313,672
Year 2	527,839
Year 3	347,489
Year 4	74,064
Year 5	218,543
Year 6	0
Thereafter	0

Paragraph 80(j): The amount of revenue recognized for the support provided by non-employer contributing entities for the participating employers is provided in Schedule B.



SECTION IV – COLLECTIVE PENSION EXPENSE

As noted earlier, the collective Pension Expense (PE) consists of a number of different items. GASB 68 refers to the first as Service Cost which is the Normal Cost using the Entry Age Normal actuarial funding method. The second item is interest on the beginning Total Pension Liability (TPL) and the cash flow during the year at the 8.00% rate of return in effect as of the previous measurement date. The next three items refer to any changes that occurred in the TPL due to:

- benefit changes, or
- actual versus expected experience, or
- changes in actuarial assumptions.

Benefit changes, which are reflected immediately in PE, can be positive, if there is a benefit improvement for existing Plan members, or negative if there is a benefit reduction. For the year ended June 30, 2017, there were no benefit changes to be recognized.

The next item to be recognized is the portion of current year changes in TPL due to actual versus expected Plan experience for the year. The portion to recognize in the current year is determined by spreading the total change over the average expected remaining service life of the entire Plan membership determined at the beginning of the year. The average expected remaining service life of active members is the average number of years the active members are expected to remain active. For the year ended June 30, 2016 this number of years for the active members is 12.60. The average expected remaining service life of the inactive members is, of course, zero. Therefore, the number of years to use for the amortization is the weighted average for all active and inactive members, or 6.30 years.

The last item under changes in TPL are changes in actuarial assumptions. There were no changes in assumptions since the last measurement date. If there was a change in TPL due to changes in actuarial assumptions, recognition of the change would also be spread over the average expected remaining service life of the plan membership.

Member contributions for the year and projected earnings on the Fiduciary Net Position (FNP), again at the discount rate used to calculate the liabilities, are subtracted from the amount determined thus far. One-fifth of current period differences between projected and actual investment earnings on the FNP are recognized in the pension expense.



The current year portions of previously determined experience, assumption and earnings amounts, recognized as deferred outflows and inflows (see Section III) are included also. Deferred outflows are added to the PE while deferred inflows are subtracted from the PE. Finally, administrative expenses and other miscellaneous items are included.

The calculation of the Collective Pension Expense determined as of the measurement date is shown in the following table:

Collective Pension Expense Determined as of the Measurement Date (\$ thousands)	
Service Cost at end of year	\$450,563
Interest on the TPL and net cash flow	2,308,693
Current-period benefit changes	0
Expensed portion of current-period difference between expected and actual experience in the total pension liability	0
Expensed portion of current-period changes of assumptions	0
Member contributions	(288,251)
Projected earnings on plan investments	(1,221,172)
Expensed portion of current-period differences between projected and actual earnings on plan investments	(195,745)
Administrative expense	0
Other	(1,679)
Recognition of beginning deferred outflows of resources as pension expense	564,599
Recognition of beginning deferred inflows of resources as pension expense	<u>(55,184)</u>
Collective Pension Expense	<u>\$1,561,824</u>



SECTION V – REQUIRED SUPPLEMENTARY INFORMATION

Paragraphs 81(a)-(b): CMC was not required to supply this information.

Paragraph 82:

Changes of assumptions. In 2016, rates of withdrawal, disability, retirement, mortality and assumed rates of salary increase were adjusted to more closely reflect actual and anticipated experience. These assumptions were recommended as part of the Experience Study for the System for the five year period ended June 30, 2015.

Method and assumptions used in calculations of actuarially determined contributions. The actuarially determined contributions in the schedule of employer contributions are calculated as of June 30 each biennium for the fiscal years ending two and three years after the valuation date. The following actuarial methods and assumptions were used to determine the most recent contributions reported in that schedule:

Actuarial cost method	Entry age
Amortization method	Level percent of pay, closed
Single equivalent amortization period	20.4 years
Asset valuation method	4-year smoothed market
Inflation	3.00 percent
Salary increase	3.75-7.00 percent, including inflation
Investment rate of return	8.50 percent, net of investment related expense



SCHEDULE A

CONNECTICUT STATE TEACHERS' RETIREMENT SYSTEM
Schedule of Employer Allocations as of June 30, 2017

Employers	2017 Expected Employer Contribution Effort for Allocation Purposes	Employer Allocation Percentage
Andover	\$ 531,598	0.052521%
Ansonia	3,270,066	0.323077%
Ashford	775,679	0.076636%
Avon	6,800,904	0.671918%
Barkhamsted	414,473	0.040949%
Berlin	5,681,859	0.561359%
Bethany	834,704	0.082467%
Bethel	5,547,527	0.548087%
Highville Chtr	389,172	0.038450%
Bloomfield	4,469,033	0.441533%
Bolton	1,710,215	0.168967%
Bozrah	432,214	0.042702%
Branford	6,488,253	0.641029%
Bridgeport	30,805,017	3.043487%
Bristol	14,315,745	1.414373%
Brookfield	4,783,727	0.472625%
Brooklyn	77,709	0.007678%
Cldrn Ctr Com Prog	91,745	0.009064%
Canaan	213,673	0.021111%
Canterbury	869,405	0.085896%
Canton	2,810,149	0.277638%
Chaplin	427,447	0.042231%
Cheshire	8,254,318	0.815514%
Chester	316,423	0.031262%
Clinton	4,066,019	0.401716%
Colchester	4,726,636	0.466984%
Amistad Acd	836,579	0.082653%
Colebrook	224,563	0.022186%
Columbia	1,022,237	0.100995%
Cornwall	271,630	0.026837%
Coventry	3,086,108	0.304903%
Cromwell	3,443,904	0.340252%
Danbury	18,293,469	1.807366%
Darien	10,794,006	1.066431%
Deep River	422,483	0.041741%
Derby	2,231,426	0.220461%
Eastford	355,530	0.035126%
East Granby	1,979,396	0.195561%



Employers	2017 Expected Employer Contribution Effort for Allocation Purposes	Employer Allocation Percentage
East Haddam	\$ 2,330,607	0.230260%
East Hampton	3,658,960	0.361499%
East Hartford	13,382,133	1.322134%
East Haven	5,547,518	0.548086%
East Lyme	5,233,913	0.517102%
Easton	1,688,206	0.166792%
East Windsor	2,569,916	0.253904%
Ellington	4,478,532	0.442472%
Enfield	9,517,824	0.940346%
Essex	570,561	0.056371%
Fairfield	21,355,924	2.109931%
Farmington	7,981,696	0.788579%
Franklin	336,380	0.033234%
Glastonbury	12,110,003	1.196449%
Granby	3,563,337	0.352052%
Greenwich	23,581,175	2.329783%
Griswold	3,089,888	0.305276%
Groton	9,443,673	0.933020%
Guilford	6,699,893	0.661939%
Hamden	11,385,732	1.124892%
Hampton	221,633	0.021897%
Hartford	39,652,641	3.917618%
Hartland	404,490	0.039963%
Hebron	1,386,274	0.136962%
Kent	485,654	0.047982%
Killingly	3,902,875	0.385598%
Lebanon	1,730,680	0.170988%
Ledyard	4,631,634	0.457598%
Lisbon	799,340	0.078973%
Litchfield	2,179,451	0.215326%
Madison	6,129,773	0.605612%
Manchester	13,059,398	1.290248%
Mansfield	2,811,507	0.277772%
Marlborough	1,015,378	0.100318%
Meriden	13,714,010	1.354922%
Middletown	8,831,661	0.872554%
Milford	12,849,116	1.269472%
Monroe	7,082,836	0.699773%
Montville	4,728,166	0.467135%
Naugatuck	6,650,528	0.657062%
New Britain	18,006,884	1.779052%
New Canaan	9,863,520	0.974500%
New Fairfield	4,932,714	0.487344%



Employers	2017 Expected Employer Contribution Effort for Allocation Purposes	Employer Allocation Percentage
New Hartford	\$ 863,266	0.085289%
New Haven	37,700,804	3.724780%
Newington	8,025,585	0.792915%
New London	5,282,280	0.521881%
New Milford	5,956,283	0.588471%
Newtown	8,719,478	0.861471%
Norfolk	210,302	0.020778%
North Branford	3,404,881	0.336397%
North Canaan	468,824	0.046319%
North Haven	6,117,480	0.604397%
No.Stonington	1,575,888	0.155695%
Norwalk	22,483,989	2.221382%
Norwich	5,729,402	0.566056%
NFA	3,890,545	0.384380%
Old Saybrook	2,992,578	0.295662%
Orange	2,369,559	0.234109%
Oxford	3,115,325	0.307789%
Plainfield	3,697,462	0.365303%
Plainville	4,362,402	0.430998%
Plymouth	2,692,911	0.266055%
Pomfret	704,209	0.069575%
Portland	2,275,400	0.224806%
Preston	897,696	0.088691%
Putnam	156,072	0.015420%
Redding	2,411,415	0.238244%
RSD 1	1,749,689	0.172867%
RSD 4	1,691,907	0.167158%
RSD 5	4,797,427	0.473978%
RSD 6	1,762,150	0.174098%
RSD 7	1,988,165	0.196428%
RSD 8	2,953,104	0.291762%
Ridgefield	10,608,049	1.048058%
Rocky Hill	4,978,119	0.491830%
Salem	746,625	0.073765%
Salisbury	603,614	0.059636%
Scotland	262,334	0.025918%
Seymour	3,968,512	0.392083%
Sharon	446,994	0.044162%
Shelton	8,859,563	0.875311%
Sherman	750,496	0.074148%
Simsbury	8,353,368	0.825299%
Somers	2,663,651	0.263164%
Southington	10,767,230	1.063785%



Employers	2017 Expected Employer Contribution Effort for Allocation Purposes	Employer Allocation Percentage
S. Windsor	\$ 8,420,235	0.831906%
Sprague	518,557	0.051233%
Stafford	2,912,612	0.287761%
Stamford	33,670,438	3.326586%
SDE	9,046,746	0.893804%
DCF Recq Home	456,167	0.045069%
Sterling	630,079	0.062251%
Stonington	4,201,431	0.415095%
Stratford	12,725,204	1.257230%
Suffield	4,502,282	0.444818%
Thomaston	1,589,931	0.157083%
Thompson	1,786,033	0.176457%
Tolland	4,441,994	0.438862%
Torrington	7,625,678	0.753405%
Trumbull	13,351,362	1.319093%
Union	141,448	0.013975%
Vernon	6,256,446	0.618127%
Voluntown	564,013	0.055724%
Wallingford	12,456,129	1.230646%
Waterbury	29,565,401	2.921015%
Waterford	5,643,473	0.557566%
Watertown	4,438,081	0.438475%
Westbrook	1,930,715	0.190752%
W.Hartford	18,671,461	1.844711%
West Haven	10,664,795	1.053665%
Weston	5,524,819	0.545843%
Westport	13,520,820	1.335836%
Wethersfield	6,582,624	0.650353%
Willington	916,187	0.090518%
Wilton	9,568,466	0.945349%
Winchester	1,106,711	0.109341%
Windham	5,849,180	0.577890%
Windsor	7,551,305	0.746057%
Windsor Locks	3,843,629	0.379744%
Winsted/Gilbert	1,058,245	0.104553%
Wolcott	4,104,873	0.405555%
Woodbridge	1,588,238	0.156915%
Woodstock	1,259,653	0.124452%
Woodstock Ad	1,744,878	0.172391%
UCONN	353,578	0.034933%
RSD 9	2,301,665	0.227401%
CCI Somers	15,783	0.001559%
RSD 10	4,310,801	0.425900%



Employers	2017 Expected Employer Contribution Effort for Allocation Purposes	Employer Allocation Percentage
Supervision District	\$ 827,231	0.081729%
NWCTC	80,942	0.007997%
MCTC	60,031	0.005931%
Norwalk CTC	61,668	0.006093%
WCSU	141,986	0.014028%
CCSU	322,083	0.031821%
ESCU	82,810	0.008181%
SCSU	375,855	0.037134%
RSD 11	595,296	0.058814%
CCTC	28,669	0.002832%
Hou CTC	39,891	0.003941%
Naug CTC	112,863	0.011151%
MCTC	83,743	0.008274%
Ed Connection	571,272	0.056441%
RSD 12	2,108,198	0.208287%
Gateway CTC	278,874	0.027552%
RSD 13	3,852,029	0.380574%
RSD 14	3,579,279	0.353627%
CCI Cheshire	38,873	0.003841%
Shared Svcs	368,153	0.036373%
CREC	19,569,565	1.933442%
RSD 15	7,206,602	0.712001%
RSD 16	3,738,693	0.369377%
TRCC (Mohegan)	30,687	0.003032%
Tunxis CTC	71,650	0.007079%
QVCC	-	0.000000%
Odyssey	456,239	0.045076%
CES	2,869,249	0.283477%
ACES	5,752,208	0.568309%
Project Learn	3,908,800	0.386183%
RSD 17	4,020,375	0.397207%
Asnun CTC	60,297	0.005957%
Project O	68,031	0.006721%
RSD 18	3,079,493	0.304249%
DCF Mental Health	28,704	0.002836%
EASTCONN	1,690,096	0.166979%
BSBE	247,864	0.024489%
RSD 19	2,478,181	0.244840%
UConn Health	188,006	0.018575%
CCI Suffield	-	0.000000%
CCI Niantic	16,673	0.001647%
Children's CTR	238,722	0.023585%
Bridges Academy	309,545	0.030583%



Employers	2017 Expected Employer Contribution Effort for Allocation Purposes	Employer Allocation Percentage
Common Ground	\$ 305,281	0.030161%
Explorations	204,597	0.020214%
Intergrated Day	477,381	0.047165%
Isaac	457,073	0.045158%
Jumoke Academy	730,044	0.072127%
Side by Side	360,571	0.035624%
Trailblazers Academy	205,652	0.020318%
New Beginnings	-	0.000000%
Elm City CP	385,957	0.038132%
Stamford Academy	158,128	0.015623%
Park City	338,127	0.033406%
AF Bridgeport Academy	278,013	0.027467%
SERC	51,974	0.005135%
AF Hartford Acad	928,350	0.091720%
Brass City	206,559	0.020408%
Path Academy	105,872	0.010460%
Booker T. Washington(BTW)	200,722	0.019831%
Total	\$ 1,012,162,000	100.000000%



SCHEDULE B

**CONNECTICUT STATE TEACHERS' RETIREMENT SYSTEM
Schedule of Pension Amounts by Employer as of June 30, 2017**

Employers	State's Proportionate Share Of the Net Pension Liability Associated with the District	Pension Expense and Revenue For State Support
Andover	\$ 7,091,555	\$ 820,286
Ansonia	43,622,931	5,045,899
Ashford	10,347,614	1,196,917
Avon	90,724,585	10,494,184
Barkhamsted	5,529,096	639,555
Berlin	75,796,445	8,767,434
Bethany	11,135,020	1,287,997
Bethel	74,004,441	8,560,152
Highville Chtr	5,191,582	600,514
Bloomfield	59,617,244	6,895,974
Bolton	22,814,406	2,638,960
Bozrah	5,765,773	666,932
Branford	86,553,802	10,011,747
Bridgeport	410,941,334	47,533,908
Bristol	190,973,158	22,090,016
Brookfield	63,815,288	7,381,565
Brooklyn	1,036,642	119,909
Cldrn Ctr Com Prog	1,223,884	141,568
Canaan	2,850,418	329,710
Canterbury	11,597,929	1,341,542
Canton	37,487,602	4,336,220
Chaplin	5,702,182	659,576
Cheshire	110,113,252	12,736,887
Chester	4,221,104	488,258
Clinton	54,241,013	6,274,101
Colchester	63,053,688	7,293,470
Amistad Acd	11,160,032	1,290,890
Colebrook	2,995,683	346,513
Columbia	13,636,722	1,577,370
Cornwall	3,623,561	419,140
Coventry	41,168,926	4,762,042
Cromwell	45,941,954	5,314,142
Danbury	244,036,306	28,227,872
Darien	143,992,876	16,655,770
Deep River	5,635,957	651,916
Derby	29,767,390	3,443,217
Eastford	4,742,804	548,604
East Granby	26,405,296	3,054,321



Employers	State's Proportionate Share Of the Net Pension Liability Associated with the District	Pension Expense and Revenue For State Support
East Haddam	\$ 31,090,473	\$ 3,596,260
East Hampton	48,810,812	5,645,985
East Hartford	178,518,697	20,649,398
East Haven	74,004,319	8,560,138
East Lyme	69,820,814	8,076,229
Easton	22,520,802	2,604,999
East Windsor	34,282,876	3,965,527
Ellington	59,743,965	6,910,631
Enfield	126,968,516	14,686,548
Essex	7,611,332	880,409
Fairfield	284,889,694	32,953,416
Farmington	106,476,441	12,316,214
Franklin	4,487,339	519,054
Glastonbury	161,548,380	18,686,429
Granby	47,535,197	5,498,434
Greenwich	314,574,713	36,387,105
Griswold	41,219,341	4,767,874
Groton	125,979,335	14,572,129
Guilford	89,377,099	10,338,320
Hamden	151,886,550	17,568,837
Hampton	2,956,599	341,992
Hartford	528,969,319	61,186,298
Hartland	5,395,922	624,151
Hebron	18,493,006	2,139,101
Kent	6,478,659	749,392
Killingly	52,064,663	6,022,361
Lebanon	23,087,407	2,670,539
Ledyard	61,786,364	7,146,877
Lisbon	10,663,253	1,233,427
Litchfield	29,074,044	3,363,018
Madison	81,771,646	9,458,591
Manchester	174,213,386	20,151,400
Mansfield	37,505,724	4,338,317
Marlborough	13,545,222	1,566,787
Meriden	182,945,968	21,161,504
Middletown	117,815,053	13,627,760
Milford	171,408,206	19,826,922
Monroe	94,485,584	10,929,222
Montville	63,074,098	7,295,831
Naugatuck	88,718,563	10,262,146
New Britain	240,213,233	27,785,654
New Canaan	131,580,130	15,219,977
New Fairfield	65,802,792	7,611,461



Employers	State's Proportionate Share Of the Net Pension Liability Associated with the District	Pension Expense and Revenue For State Support
New Hartford	\$ 11,516,040	\$ 1,332,069
New Haven	502,931,664	58,174,502
Newington	107,061,929	12,383,938
New London	70,466,034	8,150,862
New Milford	79,457,277	9,190,886
Newtown	116,318,513	13,454,654
Norfolk	2,805,445	324,508
North Branford	45,421,382	5,253,927
North Canaan	6,254,147	723,422
North Haven	81,607,663	9,439,623
No.Stonington	21,022,469	2,431,686
Norwalk	299,938,169	34,694,085
Norwich	76,430,665	8,840,795
NFA	51,900,175	6,003,334
Old Saybrook	39,921,225	4,617,720
Orange	31,610,106	3,656,366
Oxford	41,558,678	4,807,125
Plainfield	49,324,435	5,705,396
Plainville	58,194,787	6,731,437
Plymouth	35,923,636	4,155,315
Pomfret	9,394,205	1,086,635
Portland	30,354,019	3,511,073
Preston	11,975,336	1,385,197
Putnam	2,082,007	240,827
Redding	32,168,470	3,720,952
RSD 1	23,340,990	2,699,871
RSD 4	22,570,173	2,610,710
RSD 5	63,998,051	7,402,705
RSD 6	23,507,220	2,719,099
RSD 7	26,522,274	3,067,852
RSD 8	39,394,642	4,556,809
Ridgefield	141,512,195	16,368,827
Rocky Hill	66,408,496	7,681,523
Salem	9,960,033	1,152,085
Salisbury	8,052,261	931,411
Scotland	3,499,558	404,797
Seymour	52,940,254	6,123,641
Sharon	5,962,940	689,738
Shelton	118,187,255	13,670,813
Sherman	10,011,677	1,158,059
Simsbury	111,434,579	12,889,726
Somers	35,533,308	4,110,166
Southington	143,635,690	16,614,453



Employers	State's Proportionate Share Of the Net Pension Liability Associated with the District	Pension Expense and Revenue For State Support
S. Windsor	\$ 112,326,595	\$ 12,992,906
Sprague	6,917,597	800,164
Stafford	38,854,474	4,494,328
Stamford	449,166,264	51,955,416
SDE	120,684,292	13,959,647
DCF Recq Home	6,085,299	703,891
Sterling	8,405,297	972,247
Stonington	56,047,411	6,483,048
Stratford	169,755,214	19,635,719
Suffield	60,060,792	6,947,279
Thomaston	21,209,807	2,453,355
Thompson	23,825,821	2,755,952
Tolland	59,256,551	6,854,252
Torrington	101,727,133	11,766,858
Trumbull	178,108,210	20,601,917
Union	1,886,928	218,262
Vernon	83,461,472	9,654,054
Voluntown	7,523,972	870,304
Wallingford	166,165,729	19,220,521
Waterbury	394,404,756	45,621,109
Waterford	75,284,376	8,708,203
Watertown	59,204,351	6,848,214
Westbrook	25,755,886	2,979,204
W.Hartford	249,078,751	28,811,136
West Haven	142,269,191	16,456,389
Weston	73,701,515	8,525,112
Westport	180,368,791	20,863,400
Wethersfield	87,812,722	10,157,367
Willington	12,222,002	1,413,729
Wilton	127,644,082	14,764,692
Winchester	14,763,617	1,707,719
Windham	78,028,522	9,025,621
Windsor	100,735,001	11,652,097
Windsor Locks	51,274,308	5,930,940
Winsted/Gilbert	14,117,066	1,632,932
Wolcott	54,759,330	6,334,055
Woodbridge	21,187,222	2,450,743
Woodstock	16,803,863	1,943,716
Woodstock Ad	23,276,808	2,692,447
UCONN	4,716,757	545,591
RSD 9	30,704,395	3,551,602
CCI Somers	210,544	24,354
RSD 10	57,506,427	6,651,814



Employers	State's Proportionate Share Of the Net Pension Liability Associated with the District	Pension Expense and Revenue For State Support
Supervision District	\$ 11,035,320	\$ 1,276,464
NWCTC	1,079,777	124,899
MCTC	800,820	92,631
Norwalk CTC	822,653	95,157
WCSU	1,894,108	219,093
CCSU	4,296,607	496,992
ESCU	1,104,692	127,781
SCSU	5,013,932	579,966
RSD 11	7,941,296	918,576
CCTC	382,443	44,237
Hou CTC	532,151	61,554
Naug CTC	1,505,606	174,155
MCTC	1,117,135	129,220
Ed Connection	7,620,817	881,506
RSD 12	28,123,524	3,253,070
Gateway CTC	3,720,199	430,318
RSD 13	51,386,371	5,943,902
RSD 14	47,747,856	5,523,032
CCI Cheshire	518,564	59,983
Shared Svcs	4,911,184	568,081
CREC	261,059,521	30,196,961
RSD 15	96,136,637	11,120,201
RSD 16	49,874,462	5,769,018
TRCC (Mohegan)	409,373	47,352
Tunxis CTC	955,815	110,560
QVCC	-	-
Odyssey	6,086,259	704,002
CES	38,276,007	4,427,416
ACES	76,734,898	8,875,986
Project Learn	52,143,698	6,031,503
RSD 17	53,632,120	6,203,670
Asnun CTC	804,362	93,041
Project O	907,543	104,976
RSD 18	41,080,680	4,751,835
DCF Mental Health	382,913	44,292
EASTCONN	22,546,008	2,607,914
BSBE	3,306,526	382,469
RSD 19	33,059,131	3,823,976
UConn Health	2,508,013	290,104
CCI Suffield	-	-
CCI Niantic	222,423	25,728
Children's CTR	3,184,570	368,362
Bridges Academy	4,129,348	477,645



Employers	State's Proportionate Share Of the Net Pension Liability Associated with the District	Pension Expense and Revenue For State Support
Common Ground	\$ 4,072,472	\$ 471,066
Explorations	2,729,335	315,704
Intergrated Day	6,368,302	736,627
Isaac	6,097,388	705,290
Jumoke Academy	9,738,844	1,126,500
Side by Side	4,810,044	556,382
Trailblazers Academy	2,743,407	317,332
New Beginnings	-	-
Elm City CP	5,148,702	595,554
Stamford Academy	2,109,435	244,000
Park City	4,510,646	521,750
AF Bridgeport Academy	3,708,717	428,990
SERC	693,337	80,199
AF Hartford Acad	12,384,262	1,432,497
Brass City	2,755,510	318,732
Path Academy	1,412,342	163,367
Booker T. Washington(BTW)	2,677,650	309,726
Total	\$ <u>13,502,320,000</u>	\$ <u>1,561,824,000</u>



SCHEDULE C

SUMMARY OF BENEFIT PROVISIONS EVALUATED

Covered Employees

Any teacher, principal, superintendent or supervisor engaged in service of public schools, plus professional employees at State schools of higher education if they choose to be covered.

Annual Salary

Annual Salary rate for service as a Connecticut teacher during a school year excluding amounts paid for extra duty assignments, coaching, unused sick time, unused vacation or terminal pay.

Average Annual Salary

Average of Annual Salary received during three years of highest salary.

Credited Service

One month for each month of service as a teacher in Connecticut public schools, maximum 10 months for each school year. Ten months of credited service constitutes one year of Credited Service. Certain other types of teaching service, State employment, or war-time military service may be purchased prior to retirement, if the Member pays one-half the cost.

Normal Retirement

Eligibility - 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.

Benefit - 2% of Average Annual Salary times years of Credited Service (maximum benefit is 75% of Average Annual Salary)

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

Minimum Benefit: Effective January 1, 1999, Public Act 98-251 provides a minimum monthly retirement 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.

Early Retirement

Eligibility - 25 years of Credited Service including 20 years of Connecticut service, or age 55 with 20 years of Credited Service including 15 years of Connecticut service.

Benefit - Reduced normal retirement benefit. The early retirement factors currently in effect are 6% per year for the first five years by which early retirement precedes the minimum normal retirement age and 4% per year for the next five years by which early retirement precedes the minimum normal retirement age. Effective July 1, 1999, the reduction for individuals with 30 or more years of service is 3% for each year by which early retirement precedes the minimum retirement age.



Proratable Retirement

Eligibility - Age 60 with 10 years of Credited Service.

Benefit - 2% less 0.1% for each year less than 20 years of Average Annual Salary times years of Credited Service in Connecticut, plus 1% of Average Annual Salary times years of additional Credited Service time.

Disability Retirement

Eligibility - 5 years of Credited Service in Connecticut if not incurred in the performance of duty and no service requirement if incurred in the performance of duty.

Benefit - 2% of Average Annual Salary times Credited Service to date of disability, but not less than 15% of Average Annual Salary, nor more than 50% of Average Annual Salary. In addition, disability benefit under this plan (without regard to any cost-of-living adjustments) plus any initial award of Social Security benefits and workers' compensation cannot exceed Average Annual Salary.

Termination of Employment

Less than 5 years of Credited Service - Return 6% contributions with interest.

5 or more years of Credited Service - Return 6% contributions with interest and 1% contributions made prior to July 1, 1989 without interest.

10 or more years of Credited Service - Member is 100% vested in the accrued benefit based on Credited Service and Average Annual Salary 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 to work until age 60.

Member may elect return of all contributions plus interest on 6% contributions in lieu of vested benefit.

Pre-Retirement Death Benefits

A lump sum plus one of the following: survivor's benefit, return of all contributions with interest, or surviving spouse's benefit.

- Lump Sum: \$1,000 for the first 5 years of Connecticut service plus \$200 per year thereafter. Maximum benefit: \$2,000.
- Survivor's Benefit: For active teachers who die while in service, the family maximum benefit payable to survivors is \$1,500 per month. Each minor child is entitled to \$300 per month. The surviving spouse's benefit is \$300 per month if the member has 12 or less years of service. For each additional year of service, the surviving spouse's monthly benefit is increased \$25, up to a maximum of \$600.
- Accumulated contributions with interest plus dependent children's benefits as described in the "Survivor's Benefit" paragraph.
- Surviving Spouse's Benefit: An active member who is eligible for immediate retirement and who has named his or her spouse as primary beneficiary will be covered by a 100% Plan D co-participant option in the event of his or her death prior to retirement.



Benefit Options

Normal form: Partial Refund Option – 75% of total benefit is paid as a life annuity. If 25% of the benefits paid prior to death do not exceed the Member's 6% contributions plus interest frozen at the date of the benefit commencement, the difference is paid to the Member's beneficiary.

Optional Forms: 5-, 10-, 20-, or 25-year certain and life and 33-1/3%, 50%, 66-2/3%, 75%, or 100% co-participant annuity (if co-participant dies first, benefit reverts to unreduced amount).

Amounts payable under the optional forms are determined on an actuarially equivalent basis. Actuarial equivalence is determined using mortality as described in Section F of the report, 8.5% interest, and 2% compound COLA. A unisex mortality blend of 60% male was used for certain benefit forms, and a blend of 80% male was used for co-participant annuity forms.

Cost-of-Living Allowance

For teachers who retired prior to September 1, 1992, pension benefit adjustments 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%

Teachers' Required Contribution

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

State Contribution

The State's contribution requirement is determined in accordance with Section 10-183z (which reflects Public Act 79-436 as amended).

Early Retirement Incentive

A local or regional board of education may establish a retirement incentive plan. The plan shall provide for purchase of additional credited service by a board of education and a member of the system who chooses to participate in the plan, of additional credited service for such member and for payment by the board of education of not less than fifty per cent of the entire cost of such total cost. Any such plan shall specify a maximum number of years to be purchased, not to exceed five. Members must have attained age 50 and be eligible for retirement with the additional purchased service. The amount of service purchased cannot exceed the lesser of five years and one-fifth of the member's credited service.



SCHEDULE D

STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

Investment Rate of Return

Assumed annual rate of 8.00% net of investment expenses.

Rates of Annual Salary Increase

Rates of Annual Salary Increase Assumption	
Years of Service	
0	6.50%
1	6.50
2	6.25
3	6.25
4	6.25
5	6.25
6	6.25
7	6.25
8	6.25
9	6.25
10	5.50
11	5.50
12	5.00
13	5.00
14	5.00
15	4.75
16	4.50
17	4.25
18	4.00
19	3.75
20	3.50
21+	3.25



Active Member Decrement Rates

a. Table below provides a summary of the assumed rates of service retirement.

Annual Rates of Retirement						
Age	Unreduced		Proratable		Reduced	
	Male	Female	Male	Female	Male	Female
50	27.5%	27.5%			1.00%	1.00%
55	38.5%	27.5%			4.00%	4.75%
60	22.0%	27.5%	6.0%	5.5%		
65	36.3%	32.5%	13.0%	12.5%		
70	100.0%	32.5%	30.0%	14.5%		
75	100.0%	32.5%	30.0%	18.0%		
80	100.0%	100.0%	100.0%	100.0%		

b. Table below provides a summary of the assumed rates of mortality while actively employed and disability.

Annual Rates of Death and Disability				
Age	Pre-Retirement Mortality		Disability	
	Male	Female	Male	Female
20	0.0377%	0.0147%	0.0341%	0.0500%
25	0.0412%	0.0162%	0.0341%	0.0500%
30	0.0404%	0.0205%	0.0341%	0.0410%
35	0.0448%	0.0272%	0.0341%	0.0410%
40	0.0539%	0.0375%	0.0536%	0.0720%
45	0.0818%	0.0622%	0.1219%	0.1200%
50	0.1476%	0.1116%	0.2438%	0.2630%
55	0.2800%	0.1927%	0.5363%	0.4380%
60	0.4557%	0.2914%	0.9604%	0.5000%
64	0.6572%	0.4272%		



- c. Table below provides a summary of the assumed rates of withdrawal for active members prior to eligibility for retirement.

Annual Rates of Withdrawal					
10 or more years of service					
Years of Service	Male	Female	Age	Male	Female
0	14.00%	12.00%	25	1.50%	4.00%
1	11.00	10.50	30	1.50	4.00
2	8.00	8.75	35	1.50	3.50
3	6.50	7.50	40	1.50	2.30
4	4.50	6.75	45	1.59	1.50
5	3.50	6.00	50	2.04	2.00
6	3.00	5.25	55	3.44	2.50
7	2.75	4.75	59	4.00	2.90
8	2.50	4.25			
9	2.50	4.00			

Post-Retirement Mortality

For healthy retirees and beneficiaries, 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 and further adjusted to grade in increases (5% for females and 8% for males) to rates over age 80. For disabled retirees, the RPH-2014 Disabled Mortality table projected to 2017 using the BB improvement scale. The following are sample rates for the retirees, beneficiaries, and disabled:

Annual Rates of Death				
Age	Healthy		Disabled	
	Male	Female	Male	Female
50	0.1476%	0.1116%	1.8406%	1.1487%
55	0.2800%	0.1927%	2.2661%	1.3727%
60	0.4557%	0.2914%	2.7070%	1.5886%
65	0.7214%	0.4747%	3.2573%	1.9356%
70	1.1906%	0.8584%	4.0909%	2.6165%
75	2.0499%	1.5897%	5.4230%	3.8159%
80	3.6764%	2.9756%	7.5768%	5.7047%
85	6.9254%	5.4419%	11.1066%	8.5219%

Marriage Assumption

85% of males and 75% of females assumed to be married, with female spouses 3 years younger than males.

Asset Valuation Method

Market value of assets is used for GASB 67 disclosure purposes.



Actuarial Cost Method

The Entry Age Normal actuarial cost method allocates the plan's actuarial present value of future benefits to various periods based upon service. The portion of the present value of future benefits allocated to years of service prior to the valuation date is the actuarial accrued liability, and the portion allocated to years following the valuation date is the present value of future normal costs. The normal cost is determined for each active member as the level percent of payroll necessary to fully fund the expected benefits to be earned over the career of each individual active member. The normal cost is partially funded with active member contributions with the remainder funded by employer contributions.

The unfunded accrued liability is determined by subtracting the actuarial value of assets from the actuarial accrued liability.

Future Cost-of-living Increases

Members who retired prior to September 1, 1992 are assumed to receive an annual Cost-of-Living Adjustment (COLA) of 3.0%. Members who retired on or after September 1, 1992 and were hired prior to July 1, 2007 are assumed to receive an annual Cost-of-Living Adjustment (COLA) of 2.0%. Members who retired on or after September 1, 1992 and were hired on or after July 1, 2007 are assumed to receive an annual Cost-of-Living Adjustment (COLA) of 1.75%.

Administrative and Investment Expenses

The investment return assumption represents the expected return net of all administrative and investment expenses.

Payroll Growth Rate

The total annual payroll of active members is assumed to increase at an annual rate of 3.25%. This rate does not anticipate increases in the number of members.

Changes from Prior Valuation

Since the prior valuation, the Board adopted new assumptions based on the 2015 Experience Study. The changes in assumptions are summarized below:

Economic Assumptions

1. Reduce the inflation assumption from 3.00% to 2.75%.
2. Reduce the real rate of return assumption from 5.50% to 5.25% which, when combined with the inflation assumption change results in a decrease in the investment rate of return assumption from 8.50% to 8.00%.
3. Reduce the annual rate of wage increase assumption from 0.75% to 0.50%.
4. Slightly modify the merit portion of the salary scale.
5. Reduce the payroll growth assumption from 3.75% to 3.25%.

Demographic Assumptions

6. Update mortality tables to projected versions of the RPH-2014 mortality tables.
7. Increase normal retirement rates for females at most ages and prorate retirement rates for males at most ages. Decrease early retirement rates for both males and females.
8. Increase rates of withdrawal.
9. Decrease rates of disability for males.