Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

November 19, 2014

Ms. Brenda Halpin, Director
State of Connecticut
Office of the State Comptroller
Retirement Services Division
55 Elm Street
Hartford, CT 06106

Dear Ms. Halpin:

Enclosed is the "Connecticut State Employees Retirement System Report of the Actuary on the Valuation Prepared as of June 30, 2014".

Please let us know if there are any questions concerning the report.

Sincerely yours,

Thomas J. Cavanaugh, FSA, FCA, MAAA, EA
Chief Executive Officer

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

Edward J. Koebel, FCA, MAAA, EA
Principal and Consulting Actuary

TJC/JJG/EAK:kc

Enc.

S:\Connecticut SERS\Pension\Valuation\6-30-2014\Report CT SERS 6-30-2014 Valuation - FINAL.doc

3550 Busbee Pkwy, Suite 250, Kennesaw, GA 30144
Phone (678) 388-1700 • Fax (678) 388-1730
www.CavMacConsulting.com
Offices in Englewood, CO • Kennesaw, GA • Bellevue, NE • Hilton Head Island, SC

Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM

REPORT OF THE ACTUARY ON THE VALUATION PREPARED AS OF JUNE 30, 2014

November 19, 2014

State of Connecticut
State Employees Retirement Commission
55 Elm Street
Hartford, CT 06106

Members of the Commission:

Connecticut General Statutes Section 5-155a governs the operation of the Connecticut State Employees Retirement System (SERS). The actuary makes periodic valuations of the contingent assets and liabilities of the Retirement System at the direction of the Commission. We have submitted the report giving the results of the actuarial valuation of the Retirement System prepared as of June 30, 2014. The report indicates that annual actuarially determined employer contribution at the rate of 43.42% of compensation for the fiscal year ending June 30, 2016 is sufficient to support the benefits of the System.

In preparing the valuation, the actuary relied on data provided by the Comptroller's Office. While not verifying data at the source, the actuary performed tests for consistency and reasonableness.

The System is funded on an actuarial reserve basis. The actuarial assumptions recommended by the actuary and adopted by the Commission are reasonably related to the experience under the System and to reasonable expectations of anticipated experience under the System. The funding objective of the plan is that contribution rates over time will remain level as a percent of payroll. The valuation method used is the projected unit credit method. Gains and losses are reflected in the unfunded accrued liability which is being amortized as a level percent of payroll within a 17-year period. This period is based on the funding policy of SERS that amortizes the unfunded accrued liability over a declining period of years, starting with 40 years as of July 1, 1991.

This is to certify that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

The undersigned meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sincerely yours,

Thomas J. Cavanaugh, FSA, FCA, MAAA, EA
Chief Executive Officer

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

Edward J. Koebel, FCA, MAAA, EA
Principal and Consulting Actuary

TJC/JJG/EJK:kc

TABLE OF CONTENTS

CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM
REPORT OF THE ACTUARY
ON THE VALUATION
PREPARED AS OF JUNE 30, 2014

SECTION I - SUMMARY OF PRINCIPAL RESULTS

1. For convenience of reference, the principal results of the current and preceding valuations are summarized below:

Valuation Date	June 30, 2014	June 30, 2012
Number of active members	49,976	47,868
Annual compensation	$ 3,487,576,617	$ 3,354,682,145
Retired members and beneficiaries:		
Number	45,803	43,887
Annual allowances	$ 1,576,606,022	$ 1,424,477,046
Deferred Vested Members:		
Number	1,457	1,561
Annual allowances	$ 20,956,362	$ 22,680,512
Assets:		
Market Value	$ 10,472,567,077	$ 8,468,479,084
Actuarial Value	$ 10,584,795,257	$ 9,744,985,549
Unfunded actuarial accrued liability	$ 14,920,814,520	$ 13,273,766,185
Amortization period (years)	17	19
Funded Ratio	41.5%	42.3%
For Fiscal Year Ending	**June 30, 2016**	**June 30, 2014**
Actuarially Determined Employer Contribution (ADEC):		
Normal	$ 278,812,817	$ 249,996,483
Accrued liability	1,235,654,507	1,018,938,087
Total	$ 1,514,467,324	$ 1,268,934,570
Actuarially Determined Employer Contribution Rate (ADEC):		
Normal	7.99%	7.45%
Accrued liability	35.43%	30.37%
Total	43.42%	37.82%

2. All amounts shown that are prior to June 30, 2010 were developed and/or reported by the prior actuarial firm. The results of the valuation are given in Schedule A.

3. Comments on the valuation results are given in Section IV, comments on the experience and actuarial gains and losses during the valuation year are given in Section VII and the rates of contribution payable by employers are given in Section V.
4. Schedule B of this report presents the development of the actuarial value of assets.
5. Schedule D details the actuarial assumptions and methods employed. There were no changes to the actuarial assumptions or methods since the last valuation.
6. Schedule F gives a summary of the benefit and contribution provisions of the plan. There were two changes to the plan provisions since the last valuation:
    a. The 2011 SEBAC Agreement changed the benefit multiplier for the portion of benefit below the breakpoint from 1.33% to 1.40%. This change was made effective for all active members who retire on or after July 1, 2013 in Tier II, IIA and III. This change increased the actuarially determined employer contribution rate by 0.48%.
    b. A one-time decision was granted (before July 1, 2013) to members to maintain the current normal retirement eligibility beyond June 30, 2022. Employees who elected to maintain the eligibility are required to make additional employee contributions for the length of their remaining active service with SERS. The additional contribution was up to 0.72% of pensionable earnings. This change increased the actuarially determined employer contribution rate by 0.14%.
7. The Governmental Accounting Standards Board issued Statement No. 67 (GASB 67) in June 2012 and is effective for plan years beginning after June 15, 2013, which is the year ending June 30, 2014 for the Retirement System. GASB 67 replaces GASB 25 for plans and a separate GASB 67 report will be prepared for the Board. However, GASB 27 is still in effect for employers and should any of your employers need this information, we have provided some supplemental disclosure information and tables in Section VI.
8. The table on the following page provides a history of some pertinent figures.

Connecticut State Employees Retirement System

Comparative Schedule*

Valuation Date June 30	Active Members				Retired Lives				Valuation Results ($ thousands)		
	Number	Payroll ($ thousands)	Average Salary	% increase from previous year	Number	Active/ Retired Ratio	Annual Benefits ($ thousands)	Benefits as % of Payroll	Accrued Liability	Valuation Assets	UAAL
2007	52,438	$3,310,351	$63,129	2.8	37,420	1.4	$988,914	29.9%	$17,888,065	$9,584,970	$8,303,095
2008	53,196	3,497,445	65,746	4.1	38,093	1.4	1,047,479	29.9	19,243,343	9,990,247	9,253,126
2010	50,064	3,295,666	65,829	0.1	41,782	1.2	1,264,025	38.4	21,054,197	9,349,605	11,704,592
2011	47,778	3,210,666	67,200	2.1	44,051	1.1	1,391,091	43.3	21,216,725	10,122,765	11,003,960
2012	47,868	3,354,682	70,082	4.3	43,887	1.1	1,424,477	42.5	23,018,752	9,744,986	13,273,766
2014	49,976	3,487,577	69,785	(0.4)	45,803	1.1	1,576,606	45.2	25,505,610	10,584,795	14,920,815

*All amounts prior to 2010 reported by prior actuarial firm.

SECTION II - MEMBERSHIP

Data regarding the membership of the System for use as a basis for the valuation were furnished by the Comptroller's office. The following tables summarize the membership of the Retirement System as of June 30, 2014 upon which the valuation was based. Detailed tabulations of the data are given in Schedule G.

Active Members

Group	Number	Payroll	Group Averages Salary	Age*	Service*
Tier I – Hazardous	61	$6,650,409	$109,023	57.2	30.3
Tier I – Plan B	2,143	195,287,262	91,128	57.9	32.8
Tier I – Plan C	77	6,308,390	81,927	60.0	34.3
Tier II – Hazardous	2,580	244,249,013	94,670	50.0	20.9
Tier II – Others	12,514	1,023,270,380	81,770	53.7	23.0
Tier IIA – Hazardous	6,168	462,545,697	74,991	42.3	10.5
Tier IIA – Others	17,550	1,096,691,917	62,490	46.8	9.3
Tier III – Hazardous	1,678	81,964,201	48,846	33.2	1.1
Tier III – Hybrid Plan	1,370	116,588,768	85,101	50.5	14.8
Tier III – Others	5,835	254,020,580	43,534	38.0	1.3
Total	49,976	$3,487,576,617	$69,785	47.3	13.5

*Years

Of the 49,976 active members, 38,067 are vested and 11,909 are non-vested.

Retired Lives

Type of Benefit Payment	No.	Annual Benefits	Group Averages Benefit	Group Averages Age*
Retired – Pre 1980	1,317	$23,222,718	$17,633	88.9
Retired – 1980 - 1997	13,435	414,954,394	30,886	79.8
Retired – 1997 - 2011	24,825	920,866,743	37,094	66.2
Retired – 2011+	6,226	217,562,167	34,944	59.7
Total	45,803	$1,576,606,022	$34,421	70.0

*Years

This valuation also includes 1,457 deferred vested members with estimated annual benefits of $20,956,362.

SECTION III - ASSETS

1. As of June 30, 2014, the total market value of assets amounted to $10,472,567,077 as reported by the Comptroller's Office. This amount includes $6,198,255 of receivables as of the valuation date. The actuarial value of assets used for the current valuation was $10,584,795,257. Schedule B shows the development of the actuarial value of assets as of June 30, 2014.

2. Schedule C shows receipts and disbursements of the System for the two years preceding the valuation date and a reconciliation of the fund balances at market value.

SECTION IV – COMMENTS ON VALUATION

1. Schedule A of this report outlines the results of the valuation of the Retirement System as of June 30, 2014. The valuation was prepared in accordance with the actuarial assumptions and methods set forth in Schedule D and the actuarial cost method which is described in Schedule E.

2. The valuation shows that the System has a total actuarial accrued liability of $25,505,609,777, of which $18,129,796,212 is for the benefits payable on account of present retired members, beneficiaries of deceased members, and inactive members entitled to deferred vested benefits, and $7,375,813,565 is for the benefits expected to be payable on account of present active members, based on service to the valuation date. Against these liabilities, the System has total present assets for valuation purposes of $10,584,795,257 as of June 30, 2014. When this amount is deducted from the actuarial accrued liability of $25,505,609,777, there remains $14,920,814,520 as the unfunded actuarial accrued liability.

3. The employer's contributions to the System consist of normal cost contributions and accrued liability contributions. The normal cost represents the ultimate cost of the benefits and the accrued liability contribution is an addition (reduction in case of a surplus) due to the amortization of the unfunded accrued liability. The valuation indicates that annual employer normal contributions at the rate of

7.99% of active members' compensation are required to provide the currently accruing benefits of the System.

4. Accrued liability contributions of 35.43% of payroll are required to be made to amortize the unfunded accrued liability of $14,920,814,520 within 17 years from the valuation date as a level percentage of projected payroll. See Schedule J of this report for a projection of the Unfunded Accrued Liability.

SECTION V – CONTRIBUTIONS PAYABLE BY EMPLOYER

The following table shows the amount and rate of contribution payable by the employer as determined from the present valuation for the 2015/2016 fiscal year.

Contribution for		Contribution Amount	Contribution Rate
A.	Normal Cost:		
	Service retirement benefits	$349,193,125	10.01%
	Disability benefits	2,264,378	0.06%
	Survivor benefits	4,476,874	0.13%
	Total Normal Cost	$355,934,377	10.20%
B.	Less Member Contributions	(77,121,560)	(2.21)%
C.	Employer Normal Cost	$278,812,817	7.99%
D.	Unfunded Actuarial Accrued Liabilities (17 year level percent of payroll amortization)	$1,235,654,507	35.43%
E.	Total (C. + D.)	$1,514,467,324	43.42%

The following table shows a breakdown by group of the normal cost amount and rate payable by the employer as determined from the present valuation for the 2015/2016 fiscal year.

Group	Normal Cost	Normal Rate
Tier I – Hazardous	$ 0	0.00%
Tier I – Plan B	26,922,471	13.79
Tier I – Plan C	630,363	9.99
Tier II – Hazardous	34,043,681	13.94
Tier II – Others	95,233,886	9.31
Tier IIA – Hazardous	47,280,250	10.22
Tier IIA – Others	57,438,383	5.24
Tier III – Hazardous	3,392,664	4.14
Tier III – Hybrid Plan	7,343,290	6.30
Tier III – Others	6,527,829	2.57
Total	$ 278,812,817	7.99%

The following table provides the projected required contributions for the fiscal year ending June 30, 2017. These results assume an 8.00% investment return on actuarial value of assets.

Projected Contributions Required for Fiscal Year Ending June 30, 2017	June 30, 2014 Valuation	
	As % of Pay	$
Employer Normal Cost	8.00%	$ 287,224,701
Unfunded Actuarial Accrued Liabilities	35.69%	1,281,917,659
Total	43.69%	$1,569,142,360

SECTION VI – ACCOUNTING INFORMATION

1. Governmental Accounting Standards Board Statements 25 and 27 set forth certain items of required supplementary information to be disclosed in the financial statements of the System and the employer. One such item is a distribution of the number of employees by type of membership, as follows:

NUMBER OF ACTIVE AND RETIRED MEMBERS
AS OF JUNE 30, 2014

GROUP	NUMBER
Retirees and beneficiaries currently receiving benefits	45,803
Terminated employees entitled to benefits but not yet receiving benefits	1,457
Active plan members	49,976
Total	97,236

2. Another such item is the schedule of funding progress as shown below.

SCHEDULE OF FUNDING PROGRESS
(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - PUC (b)	Unfunded AAL (UAAL) (b – a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b – a) / c)
6/30/2008	$9,990,247	$19,243,373	$9,253,126	51.9%	$3,497,445	264.6%
6/30/2010	9,349,605	21,054,197	11,704,592	44.4	3,295,666	355.2
6/30/2011	10,122,765	21,126,725	11,003,960	47.9	3,210,666	342.7
6/30/2012	9,744,986	23,018,752	13,273,766	42.3	3,354,682	395.7
6/30/2014	10,584,795	25,505,610	14,920,815	41.5	3,487,577	427.8

All figures prior to 6/30/2010 were reported by the prior actuarial firm.

3. The following shows the schedule of employer contributions (all dollar amounts are in thousands).

Fiscal Year Ending June 30	Valuation Date Ending June 30	Annual Required Contribution	Actual Contribution	Percentage Contributed
2012	2011	$ 926,372	$ 926,343	100.0%
2013	2011	1,059,652	1,058,113	99.9%
2014	2012	1,268,935	1,268,890	100.0%
2015	2012	1,379,189	N/A	N/A
2016	2014	1,514,467	N/A	N/A
2017	2014	1,569,142	N/A	N/A

4. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at June 30, 2014. Additional information as of the latest actuarial valuation follows.

Valuation date	6/30/2014
Actuarial cost method	Projected Unit Credit
Amortization method	Level percent of payroll, closed
Remaining amortization period	17 years
Asset valuation method	5-year smoothed actuarial value
Actuarial assumptions:	
Investment rate of return*	8.00%
Projected salary increases*	4.00% - 20.00%
Cost-of-living adjustments	2.30% - 3.60%
Social Security Wage Base	3.50%
*Includes inflation at	3.75%

SECTION VII – EXPERIENCE

Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year to year fluctuations are common. Detail on the derivation of the experience gain/(loss) for the two year period ended June 30, 2014 is shown below. Schedule H provides detailed gain/(loss) by source.

		$ Millions
(1)	UAAL* as of June 30, 2012	$ 13,273.8
(2)	Total Normal cost from 2012 valuation	315.5
(3)	Actual Employer and Employee contributions	1,228.0
(4)	Interest accrual: [[(1) +(2)] x .08] - [(3) x .0392]	1,039.0
(5)	Expected UAAL as of June 30, 2013: (1) + (2) – (3) + (4)	$ 13,400.3
(6)	Total Normal cost for 2013 fiscal year	323.5
(7)	Actual Employer and Employee contributions	1,419.9
(8)	Interest accrual: [[(5) + (6)] x .08] - [(7) x .0392]	1,042.2
(9)	Expected UAAL as of June 30, 2014: (5) + (6) - (7) + (8)	$ 13,346.1
(10)	Plan Changes	193.4
(11)	Expected UAAL as of June 30, 2014: (9) + (10)	$ 13,539.5
(12)	Actual UAAL as of June 30, 2014	$ 14,920.8
(13)	Gain/(loss): (11) – (12) (See Schedule H)	$ (1,381.3)
(14)	Gain/(loss) as percent of actuarial accrued liabilities at June 30, 2013 ($23,690.0)	(5.8)%

*Unfunded actuarial accrued liability.

Valuation Date June 30	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2012	(4.2)%
2014	(5.8)%

SCHEDULE A

RESULTS OF VALUATION

PREPARED AS OF JUNE 30, 2014

	JUNE 30, 2014	JUNE 30, 2012
1. ACTUARIAL ACCRUED LIABILITY		
Present value of prospective benefits payable in respect of:		
(a) Present active members		
- Tier I – Hazardous Duty	$ 49,210,224	$ 66,444,936
- Tier I – Plan B	1,173,883,113	1,343,050,284
- Tier I – Plan C	37,753,401	50,902,606
- Tier II – Hazardous Duty	1,188,010,935	1,246,123,225
- Tier II – All Others	2,715,215,560	2,316,784,672
- Tier IIA – Hazardous Duty	912,871,620	590,337,378
- Tier IIA – All Others	1,057,034,112	756,291,436
- Tier III – Hazardous Duty	9,671,840	431,199
- Tier III – Hybrid Plan	204,950,079	0
- Tier III – All Others	27,212,681	1,598,975
- Total actives	$ 7,375,813,565	$ 6,371,964,711
(b) Present inactive members and members entitled to deferred vested benefits:	225,853,075	235,055,761
(c) Present annuitants and beneficiaries	17,903,943,137	16,411,731,262
(d) Total actuarial accrued liability [1(a) + 1(b) + 1(c)]	$ 25,505,609,777	$ 23,018,751,734
2. ACTUARIAL VALUE OF ASSETS	$ 10,584,795,257	$ 9,744,985,549
3. UNFUNDED ACTUARIAL ACCRUED LIABILITY [1(d) – 2]	$ 14,920,814,520	$ 13,273,766,185

SCHEDULE B

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

	June 30, 2014	June 30, 2013	June 30, 2012
(1) Actuarial Value Beginning of Year*	$9,784,500,362	$9,744,985,549	$10,122,765,430
(2) Market Value End of Year**	10,472,567,077	9,182,442,986	8,468,479,084
(3) Market Value Beginning of Year	9,182,442,986	8,468,479,084	8,984,875,027
(4) Cash Flow			
(a) Contributions**	1,419,894,684	1,227,952,580	1,001,754,671
(b) Disbursements	(1,570,558,006)	(1,487,692,948)	(1,424,665,994)
(c) Net: (4)(a) + (4)(b)	(150,663,322)	(259,740,368)	(422,911,323)
(5) Investment Income			
(a) Market Total: (2) – (3) – (4)(c)	1,440,787,413	973,704,270	(93,484,620)
(b) Assumed Rate	8.00%	8.00%	8.25%
(c) Amount for Immediate Recognition: [(1) x (5)(b)] + [(4)(c) less Receivable**] x (5)(b) x 0.5	776,485,566	768,975,635	817,409,326
(d) Amount for Phased-In Recognition: (5)(a) – (5)(c)	664,301,847	204,728,635	(910,893,946)
(6) Phased-In Recognition of Investment Income			
(a) Current Year: (5)(d) x 0.20	132,860,369	40,945,727	(182,178,789)
(b) First Prior Year	40,945,727	(182,178,789)	159,875,887
(c) Second Prior Year	(182,178,789)	159,875,887	22,969,457
(d) Third Prior Year	159,875,887	22,969,457	(511,332,736)
(e) Fourth Prior Year	22,969,457	(511,332,736)	(261,611,703)
(f) Total Recognized Investment Gain	174,472,651	(469,720,454)	(772,277,884)
(7) Preliminary Actuarial Value End of Year: (1) + (4)(c) + (5)(c) + (6)(f)	10,584,795,257	9,784,500,362	9,744,985,549
(8) Final Actuarial Value End of Year Using 20% Corridor: Greater of [(7) and .8 x (2)], but no more than 1.2 x (2)	10,584,795,257	9,784,500,362	9,744,985,549
(9) Difference Between Market & Actuarial Values: (2) – (8)	$(112,228,180)	$(602,057,376)	$(1,276,506,465)
(10) Rate of Return on Preliminary Actuarial Value	9.73%	3.11%	0.39%

* Before corridor constraints, if applicable.

** Includes receivables of: $6,198,255 at 6/30/2014, $5,839,847 at 6/30/2013 and $6,635,867 at 6/30/2012.

SCHEDULE C

SUMMARY OF RECEIPTS AND DISBURSEMENTS
(Market Value)

	YEAR ENDING		
	June 30, 2014	June 30, 2013	June 30, 2012
Receipts for the Year			
Contributions:			
Members	$ 144,806,616	$ 163,999,986	$ 68,776,064
State	1,024,371,178	829,360,072	742,685,744
Federal (Net of Transfers)	244,518,635	228,752,675	183,656,996
Subtotal	$ 1,413,696,429	$ 1,222,112,733	$ 995,118,804
Amount Receivable	6,198,255	5,839,847	6,635,867
Investment Earnings (net of expenses)	1,440,787,413	973,704,270	(93,484,620)
TOTAL	$ 2,860,682,097	$ 2,201,656,850	$ 908,270,051
Disbursements for the Year			
Benefit Payments	$ 1,563,029,412	$ 1,481,708,745	$ 1,417,025,660
Refunds to Members	7,528,594	5,984,203	7,640,334
TOTAL	$ 1,570,558,006	$ 1,487,692,948	$ 1,424,665,994
Excess of Receipts over Disbursements	$ 1,290,124,091	$ 713,963,902	$ (516,395,943)
Reconciliation of Asset Balances			
Asset Balance as of the Beginning of Year	$ 9,182,442,986	$ 8,468,479,084	$ 8,984,875,027
Excess of Receipts over Disbursements	1,290,124,091	713,963,902	(516,395,943)
Asset Balance as of the End of Year	$ 10,472,567,077	$ 9,182,442,986	$ 8,468,479,084
Rate of Return	15.82%	11.68%	(1.07)%

SCHEDULE D

OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS

Adopted or reaffirmed by the Commission for the June 30, 2012 and later valuations.

VALUATION INTEREST RATE: 8.00% per annum, compounded annually, net of expenses.

SALARY INCREASES:

No salary increases are assumed for the 2012 & 2013 fiscal years. From fiscal year 2014 through 2016 salary increases are assumed to be 1% less than the table below. After the 2016 fiscal year, salary increases are assumed to continue using the same service schedule prior to 2012, which are as follows:

Years of Service	Rate
0	10.00%
1	20.00%
2	10.00%
3	6.25%
4	6.00%
5	5.75%
6	5.50%
7	5.50%
8	5.50%
9	5.50%
10	5.00%
11	5.00%
12	5.00%
13	5.00%
14	5.00%
15+	4.00%

COST OF LIVING ADJUSTMENTS:

Group	Rate
Pre July 1, 1980 Retirees	3.60%
July 1, 1980 – June 30, 1997 Retirees	3.00%
July 1, 1997 – October 1, 2011 Retirees	2.60%
Post October 1, 2011 Retirees	2.30%

SOCIAL SECURITY WAGE BASE INCREASES: 3.50% per annum.

PAYROLL GROWTH ASSUMPTION: 3.75% per annum.

IMPACT OF LONGLEY DECISION: Benefits for members retiring from service on or after the *Longley* decision date are assumed to increase by 0.084% as a result of the revised treatment of longevity pay. Retroactive application of *Longley* has been reflected in this valuation to the extent impacted retiree benefits have been recalculated.

SEPARATIONS BEFORE SERVICE RETIREMENT: Representative values of the assumed annual rates of separation before service retirement are as follows:

WITHDRAWAL

Annual Rates of Non-Hazardous Withdrawal*								
	Years of Service							
Age	0	1	2	3	4	5	6-9	10+
Men								
20	40%	40%	40%	20%	20%	8%	5%	5.0%
25	30	30	20	10	10	8	4	5.0
30	25	22	14	8	7	8	4	4.0
35	25	15	10	7	6	6	4	3.0
40	25	15	9	7	6	5	4	2.5
45	25	15	9	7	6	5	4	2.2
50	25	15	9	7	6	5	4	1.5
55+	25	15	9	7	6	5	4	0.0
Women								
20	35%	45%	30%	20%	20%	10%	5%	5.0%
25	25	25	15	12	9	10	5	5.0
30	20	20	10	9	7	8	5	4.0
35	20	15	9	7	6	6	4	3.0
40	20	15	8	7	6	5	4	2.5
45	20	15	8	7	6	5	3	2.0
50	20	15	8	7	6	5	3	1.5
55+	20	15	8	7	6	5	3	0.0

* For Hazardous Male Employees, multiply male rates by 35%
* For Hazardous Female Employees, multiply female rates by 55%

DISABILITY

Annual Rates of Disability		
Age	**Hazardous**	**Non-Hazardous**
25	0.00%	0.01%
30	0.05	0.04
35	0.15	0.05
40	0.25	0.12
45	0.30	0.16
50	0.45	0.24
55	0.60	0.40
60	0.80	0.60
65	1.10	0.80
70	1.40	1.00

RETIREMENT: The assumed annual rates of retirement are shown below.

Annual Rates of Retirement		
Hazardous Employees		
Tier I, II & IIa		
Age	**First Year Eligible For**	**All Years After**
44 and Less	18.0%	10.0%
45-48	25.0%	10.0%
49-59	10.0%	10.0%
60-69	25.0%	15.0%
70-79	100.0%	20.0%
80	100.0%	100.0%
Tier III		
49 and Less	18.0%	10.0%
50-59	25.0%	10.0%
60-69	10.0%	10.0%
70-79	100.0%	20.0%
80	100.0%	100.0%

Annual Rates of Retirement			
Non-Hazardous Employees			
Tier I, II & IIa			
Age	Early Retirement	Normal Retirement	
		First Year	Other Years
55	7.5%	15.0%	12.5%
56-59	5.0%	15.0%	12.5%
60	5.0%	25.0%	12.5%
61	15.0%	25.0%	15.0%
62	10.0%	10.0%	30.0%
63	35.0%	35.0%	25.0%
64	45.0%	45.0%	25.0%
65-69	65.0%	65.0%	25.0%
70-79	100.0%	100.0%	20.0%
80	100.0%	100.0%	100.0%
Tier III			
Age	Early Retirement	Normal Retirement	
		First Year	Other Years
58-59	5.0%	7.5%	5.0%
60	5.0%	12.5%	12.5%
61	10.0%	15.0%	15.0%
62	10.0%	10.0%	30.0%
63	10.0%	35.0%	25.0%
64	10.0%	45.0%	25.0%
65-69	25.0%	65.0%	25.0%
70-79	25.0%	100.0%	20.0%
80	100.0%	100.0%	100.0%

* These rates also apply for Tier I Plan B and Tier I Plan C members upon attainment of age 60 with at least 10 years of service.

DEATHS AFTER RETIREMENT: The RP2000 Mortality Table for Annuitants and Non-Annuitants projected with Scale AA 15 years for men (set back 2 years) and 25 years for women (set back 1 year) is used for the period after retirement and for dependent beneficiaries. Representative values of the assumed annual rates of mortality are as follows:

Age	Men	Women	Age	Men	Women
40	0.086%	0.044%	65	0.810%	0.760%
45	0.107	0.069	70	1.425	1.311
50	0.142	0.101	75	2.460	2.083
55	0.219	0.198	80	4.483	3.482
60	0.414	0.392	85	8.075	5.981

In our opinion, the projection of the mortality rates with Scale AA continues to provide a sufficient margin in the assumed rates of mortality to allow for additional improvement in mortality experience.

55% (men) and 80% (women) of the RP-2000 Disability Mortality Table is used for the period after disability.

ASSET METHOD: Actuarial Value, as developed in Schedule B. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected value of assets, based on the assumed valuation rate of return. The amount recognized each year is 1/5 of the difference between market value and expected actuarial value. In addition, the actuarial value of assets cannot be less than 80% or more than 120% of the market value of assets.

VALUATION METHOD: Projected Unit Credit cost method. See Schedule E for a brief description of this method.

SPOUSES: For members who have elected spouse coverage, husbands are assumed to be three years older than their wives.

PERCENT MARRIED: 80% of active members are assumed to be married with an average of two children who are on average age 12.

OTHER ASSUMPTIONS:

- 20% of Pre-Retirement deaths are assumed to be service related,
- 50% of Tier I Hazardous Employees are assumed to be State Police,
- To take into account State Police Supplemental Benefits and the offset of Workers Compensation, Social Security, and Non-Rehabilitation Earnings, the following minimum and maximum benefits as a percent of salary are assumed for disability benefits:

	Minimum	Maximum
Tier I State Police	60%	80%
All Other Members	40%	60%

SCHEDULE E

ACTUARIAL COST METHOD

The valuation is prepared on a projected benefit basis, under which the present value, at the interest rate assumed to be earned in the future (currently 8.00%), of each member's expected benefits at retirement or death is determined, based on age, service and sex. The calculations take into account the probability of a member's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his terminating with a service, disability or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable on account of the active members is added to the present value of the expected future payments to retired members, beneficiaries and members entitled to deferred vested benefits to obtain the present value of all expected benefits payable from the System on account of the present group of members and beneficiaries.

The Projected Unit Credit cost method is used to develop employer contributions. The employer contributions required to support the benefits of the System consist of a normal contribution and an unfunded actuarial accrued liability contribution.

The Actuarial Accrued Liability is determined as the present value of benefits accrued to the valuation date, where the accrued benefit for each active member is the pro-rata portion (based on service to the valuation date) of the projected benefit payable at termination, death, disability or retirement. The Actuarial Accrued Liability for deferred vested and inactive members is the present value as of the valuation date of their remaining benefit payments.

The normal contribution is determined as the present value of the portion of the projected benefit attributable to the year following the valuation date.

The Unfunded Actuarial Accrued Liability is determined by subtracting the Actuarial Value of Assets from the Actuarial Accrued Liability.

SCHEDULE F

SUMMARY OF MAIN SYSTEM PROVISIONS AS INTERPRETED FOR VALUATION PURPOSES

The Connecticut State Employees Retirement System (CT SERS) is a defined benefit pension plan established by the Connecticut General Assembly for the purpose of providing retirement allowances and other benefits for State employees in Connecticut, and their survivors and other beneficiaries.

Eligibility Requirements

Tier I	All State Employees, Elected Officials and their Appointees hired prior to July 1, 1984. Those employees hired between July 1, 1982 and January 1, 1984 could elect to move to Tier II.
Tier II	All State Employees, Elected Officials and their Appointees hired on or after July 1, 1984.
Tier IIA	All State Employees, Elected Officials and their Appointees hired on or after July 1, 1997.
Tier III	All State Employees, Elected Officials and their Appointees hired on or after July 1, 2011.

Final Average Earnings (FAE)

Tier I, II, and IIA	Average Salary of the three highest paid years of service. Effective January 1, 1986, no one year's earnings can be greater than 130% of the average of the two preceding years in calculating the Final Average Earnings.
Tier III	Average Salary of the five highest paid years of service. No one year's earnings can be greater than 130% of the average of the two preceding years in calculating the Final Average Earnings.

Normal Retirement Benefit

Eligibility	*Tier I Hazardous* – 20 years of credited service. *Tier I Plans B and C* – Earliest of age 55 with 25 years of service, age 60 with 10 years of service, or age 70 with 5 years of service. *Tier II Hazardous* – 20 years of credited service. *Tier II and IIA* – For those who will be eligible for retirement on or before July 1, 2022, the earliest of age 62 with 10 years of vesting service (effective July 1, 1992), age 60 with 25 years

of vesting service, age 70 with 5 years of vesting service, or age 62 with 5 years of actual state service for terminations on or after July 1, 1997.

For those who will not be eligible for retirement on or before July 1, 2022, the earliest of age 65 with 10 years of vesting service, age 63 with 25 years of vesting service, age 70 with 5 years of vesting service.

Tier III Hazardous – Earlier of Age 50 and 20 years of benefit service or 25 years of benefit service.

Tier III – Age 63 and 25 years of benefit service or Age 65 and 10 years of benefit service.

Benefit

Tier I Hazardous – 50% of FAE plus 2% for each year of service in excess of 20.

Tier I Plan B – 2% of FAE times years of service up to age 65. Thereafter, 1% of FAE up to $4,800, plus 2% of FAE in excess of $4,800 times years of service. At age 70, greater of 1.25% of FAE up to $4,800 plus 2.5% of FAE in excess of $4,800 times years of service (maximum 20 years) or 1.0% of FAE up to $4,800 plus 2% of FAE in excess of $4,800 times year of service. Minimum benefit with 25 years is $833.34 per month.

Tier I Plan C – 2% of FAE times years of service. At age 70, greater of 2.5% of FAE times years of service (maximum 20 years) or 2.0% of FAE times years of service. Minimum benefit with 25 years is $833.34 per month.

Tier II,IIA and III Hazardous – 2.5% of FAE times years of service up to 20 years plus 2.0% of FAE times years of service in excess of 20 years, if any. Minimum benefit with 25 years is $360 per month.

Tier II, IIA and III All Others – 1.40% of FAE plus 0.433% of FAE in excess of year's breakpoint*, times years of service from October 1, 1982 up to 35 years plus 1.625% of FAE times years of service in excess of 35 years, if any. Minimum benefit with 25 years if $360 per month.

* $10,700 increased by 6% each year after 1982, rounded to nearest $100 but not greater than Social Security Covered Compensation.

Early Retirement Benefit

Eligibility	*Hazardous* – None. *Tier I* – Age 55 with 10 years of service. *Tier II and IIA* – Age 55 with 10 years of service. *Tier III* – Age 58 with 10 years of service.
Benefit	*Tier I* – Benefit is Normal Retirement Benefit reduced for retirement prior to age 60 with less than 25 years of service. *Tier II, IIA and III* – Benefit is Normal Retirement Benefit reduced 0.25% (effective July 1, 1991) for each month prior to age 60 if at least 25 years of service or age 62 if at least 10 but less than 25 years of service. For those who retire on or after October 2, 2011 but prior to meeting the age and service requirements for a normal retirement, will be subject to a benefit reduced by 0.50% for each month prior to Normal Retirement.

Disability Retirement Benefit

Tier I	For non-service disabilities occurring prior to age 60 with at least 5 years of service, benefit is 3% of FAE times years of service; maximum benefit is 1.667% of FAE times year of service projected to age 65. For service disabilities occurring prior to age 60, benefit is 1.667% of Salary times years of service projected to age 65 (maximum 30 years). Exception: State Police benefit is equal to the normal retirement benefit if more than 20 years of service. State Police also receives an additional benefit of $360 per month plus $300 to spouse plus $300 to a surviving dependent child.
Tier II, IIA and III	Prior to age 65 for service related disability or at any age with at least 10 years of service, benefit is 1.333% of FAE plus 0.50% of FAE in excess of the year's breakpoint, times service projected to age 65 (maximum 30 years).

Deferred Vested Retirement Benefit

Eligibility	*Tier I* - 10 years of service. *Tier II and IIA* – Effective July 1, 1997, 5 years of actual state service, 10 years of vesting service, or age 70 with 5 years of service. *Tier III* – 10 years of benefit service.
Benefit	*Tier I* – Benefit is payable at Normal Retirement Age or an Early Retirement Benefit is payable at age 55. *Tier II and IIA* – Benefit is payable at Normal Retirement Age or an Early Retirement Benefit is payable at age 55. *Tier III* – Benefit is payable at Normal Retirement Age or an Early Retirement Benefit is payable at age 58.

Pre-Retirement Spouse's Benefit

Tier I	State Police – Survivor benefits to spouse of $670 per month plus $300 to a surviving dependent child. If eligible for early or normal retirement, 50% of the average of the Life Benefit and the 50% Joint & Survivor Benefit the member would have received. If not eligible for retirement but with 25 years of service, the same benefit calculated as though age 55 using service and earnings at death. If not eligible for retirement, return of contributions (5% interest).
Tier II, IIA and III	If eligible for early or normal retirement, 50% of the 50% Joint & Survivor Benefit the member would have received. If not eligible for retirement but with 25 years of service, the same benefit calculated as though age 55 using service and earnings at death. If not eligible for retirement, return of contributions (5% interest).
Tiers I, II, IIA and III	If death is due to employment and there are dependent children under age 18, spouse will be paid $100,000 in 10 annual installments while living and not remarried. In addition, $50 per month will be paid to each child while under age 18. If death is due to employment and there are no dependent children under age 18, spouse will be paid $50,000 in not less than 10 annual installments.

Payment Options	50% or 100% Joint and Survivor (Normal Form if married). Straight life annuity (Normal Form if not married). 10 or 20 year certain and life annuity.
Cost of Living Adjustments (COLA)	Annual adjustments each July 1 of up to 5% for retirements prior to July 1, 1980; 3% for retirements after July 1, 1980. For members (and beneficiaries) not covered by Social Security and age 62 and over, the maximum increase is 6%. For employees retiring after June 30, 1999, the annual adjustment will be 60% of the increase in CPI up to 6% and 75% of the increase in the CPI over 6%. This adjustment will be no less than 2.5% and no greater than 6%. Employees retiring between July 1, 1997 and June 30, 1999 made an irrevocable choice between the above formula and a fixed 3% annual adjustment. An employee from Tier IIA must have at least 10 years of actual state service or directly make the transition into retirement in order to be eligible for annual adjustments. For employees retiring on or after October 2, 2011, the minimum COLA shall be 2.0% and the maximum COLA shall be 7.5%.
Member Contributions*	
Tier I – Hazardous	4% of earnings up to Social Security Taxable Wage Base plus 5% of earnings above that level.
Tier I – Plan B	2% of earnings up to Social Security Taxable Wage Base plus 5% of earnings above that level.
Tier I – Plan C	5% of earnings.
Tier II – Hazardous	4% of earnings.
Tier II – All Others	None.
Tier IIA & III – Hazardous	5% of earnings.
Tier IIA & III – All Others	2% of earnings.

* Increased for anyone electing to maintain retirement eligibility.

Hybrid Defined Benefit/Defined Contribution Plan for Employees of Higher Learning

Individuals hired on or after July 1, 2011 otherwise eligible for the Alternate Retirement Plan ("ARP") shall be eligible to be members of the new Hybrid Plan in addition to their existing choices. Individuals who are currently members of the ARP shall be eligible to join the Hybrid Plan on a one time option at the full actuarial cost. The Hybrid Plan shall have defined benefits identical to Tier II/IIA and Tier III for individuals hired on or after July 1, 2011, but shall require employee contributions 3% higher than the contribution required from the Applicable Tier II/IIA/III Plan. An employee shall have the option, upon leaving state service, of accepting the defined benefit amount, or electing to receive a return of his/her contributions to the Hybrid Plan, plus a 5% employer match, plus 4% interest ("cash out option"). In the event the employee elects the cash out option, he/she shall permanently waive any entitlement they may have to health insurance as a retired state employee unless they convert the cash out option to a periodic payment as would be required under the current ARP Plan.

SCHEDULE G

TABLES OF MEMBERSHIP DATA

STATUS RECONCILIATION OF ACTIVE MEMBERS

	Total
As of June 30, 2012	47,868
Retirements	(2,829)
Disability	(304)
Terminated Vested	(82)
Terminated Non-Vested	(24)
Deaths	(128)
Rehires	761
New Participants	7,818
Refunds	(3,104)
As of June 30, 2014	49,976

STATUS RECONCILIATION OF INACTIVE MEMBERS

	Retirees	Disability	Survivor	Deferred Vested	Total
As of June 30, 2012	35,740	3,975	4,172	1,561	45,448
Retirements	209	(9)		(200)	0
Disability		1		(1)	0
Survivors	(443)	(77)	520		0
Deaths with no Survivors	(224)	(13)	(85)		(322)
Rehires	(10)	(5)		(31)	(46)
Refunds	(3)			(4)	(7)
Certain Period Ended			(44)		(44)
Data Corrections	(940)	(84)	(75)	50	(1,049)
From Active	2,829	304	65	82	3,280
As of June 30, 2014	37,158	4,092	4,553	1,457	47,260

SCHEDULE G
(Continued)

TIER I – HAZARDOUS DUTY

The Number and Average Annual Compensation of Active Employees
By Age and Service as of June 30, 2014

Age	Years of Service							Total	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25									$ 0
25 to 29									0
30 to 34									0
35 to 39									0
40 to 44									0
45 to 49									0
50 to 54		2				1	11	14	1,445,634
55 to 59		2	1	1		2	25	31	3,403,214
60 to 64	1						12	13	1,553,505
65 to 69					1		1	2	160,106
70 & Up							1	1	87,950
Total	1	4	1	1	1	3	50	61	$ 6,650,409

Average Age: 57.2
Average Service: 30.3

Average Salary: $109,023

SCHEDULE G
(Continued)

TIER I – PLAN B

The Number and Average Annual Compensation of Active Employees By Age and Service as of June 30, 2014

Age	Years of Service							Total	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25									$ 0
25 to 29									0
30 to 34									0
35 to 39									0
40 to 44									0
45 to 49	2	1	1		1	2	10	17	1,074,657
50 to 54	5	6	9	11	14	16	519	580	47,753,532
55 to 59	7	4	15	17	22	33	763	861	75,661,993
60 to 64	1	2	12	16	15	17	395	458	45,099,784
65 to 69	1	4	3	5	6	4	125	148	16,403,005
70 & Up	2		1				76	79	9,294,291
Total	18	17	41	49	58	72	1,888	2,143	$ 195,287,262

Average Age: 57.9
Average Service: 32.8

Average Salary: $91,128

SCHEDULE G
(Continued)

TIER I – PLAN C

The Number and Average Annual Compensation of Active Employees By Age and Service as of June 30, 2014

Age	Years of Service							Total	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25									$ 0
25 to 29									0
30 to 34									0
35 to 39									0
40 to 44									0
45 to 49							2	2	147,865
50 to 54							12	12	945,604
55 to 59			1	1		1	30	33	2,596,455
60 to 64	1			1		2	11	15	1,249,076
65 to 69							7	7	552,279
70 & Up				1			7	8	817,111
Total	1		1	3		3	69	77	$ 6,308,390

Average Age: 60.0
Average Service: 34.3

Average Salary: $81,927

SCHEDULE G
(Continued)

TIER II – HAZARDOUS DUTY

The Number and Average Annual Compensation of Active Employees
By Age and Service as of June 30, 2014

Age	Years of Service							Total	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25									$ 0
25 to 29									0
30 to 34									0
35 to 39			7	22				29	2,425,742
40 to 44	3	4	20	341	177	4	1	550	52,009,936
45 to 49	3	6	16	290	421	83	4	823	81,255,939
50 to 54	2	4	14	176	254	132	10	592	56,266,905
55 to 59		3	8	105	126	57	12	311	27,811,243
60 to 64			3	65	78	33	4	183	16,242,043
65 to 69			1	26	41	10		78	7,041,821
70 & Up		1	2	6	2	3		14	1,195,384
Total	8	18	71	1,031	1,099	322	31	2,580	$ 244,249,013

Average Age: 50.0
Average Service: 20.9

Average Salary: $94,670

SCHEDULE G
(Continued)

TIER II – ALL OTHERS

The Number and Average Annual Compensation of Active Employees
By Age and Service as of June 30, 2014

	Years of Service							Total	
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25									$ 0
25 to 29									0
30 to 34			1					1	55,323
35 to 39	2	4	16	41	3			66	4,176,334
40 to 44	21	26	60	436	257	22		822	63,719,032
45 to 49	48	62	70	590	988	872	17	2,647	212,560,362
50 to 54	54	83	93	520	924	1,852	167	3,693	306,715,508
55 to 59	40	51	74	437	647	1,377	157	2,783	231,127,211
60 to 64	16	36	63	293	506	700	115	1,729	143,164,647
65 to 69	12	8	24	99	188	206	60	597	49,048,117
70 & Up	7	6	7	44	54	47	11	176	12,703,846
Total	200	276	408	2,460	3,567	5,076	527	12,514	$ 1,023,270,380

Average Age: 53.7
Average Service: 23.0

Average Salary: $81,770

SCHEDULE G
(Continued)

TIER IIA – HAZARDOUS DUTY

The Number and Average Annual Compensation of Active Employees
By Age and Service as of June 30, 2014

Age	Years of Service							Total	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25		1						1	$ 71,637
25 to 29	142	122	3					267	17,084,310
30 to 34	189	737	92					1,018	68,120,571
35 to 39	106	576	553	114	4			1,353	101,205,296
40 to 44	77	431	511	307	22			1,348	107,761,334
45 to 49	51	253	406	198	9	1		918	72,590,593
50 to 54	36	206	236	97	6	3		584	44,416,765
55 to 59	13	115	162	72	4	3	1	370	28,143,295
60 to 64	3	51	104	28		1		187	14,761,222
65 to 69	1	8	50	18	1			78	5,777,525
70 & Up	1	3	30	10				44	2,613,149
Total	619	2,503	2,147	844	46	8	1	6,168	$ 462,545,697

Average Age: 42.3
Average Service: 10.5

Average Salary: $74,991

SCHEDULE G
(Continued)

TIER IIA – ALL OTHERS

The Number and Average Annual Compensation of Active Employees By Age and Service as of June 30, 2014

	Years of Service							Total	
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25	99	5						104	$ 2,407,726
25 to 29	382	244	3					629	30,602,268
30 to 34	490	1,092	164	3				1,749	99,017,041
35 to 39	377	1,191	727	212				2,507	155,849,782
40 to 44	332	1,069	823	491	2			2,717	177,711,633
45 to 49	341	1,047	758	462	9	2		2,619	170,340,252
50 to 54	329	1,029	821	441	5			2,625	168,549,750
55 to 59	290	886	659	391	8	2		2,236	147,541,398
60 to 64	184	599	457	255	4	2	1	1,502	97,282,893
65 to 69	105	209	204	107	3			628	36,727,431
70 & Up	63	87	57	26	1			234	10,661,744
Total	2,992	7,458	4,673	2,388	32	6	1	17,550	$ 1,096,691,918

Average Age: 46.8
Average Service: 9.3

Average Salary: $62,490

SCHEDULE G
(Continued)

TIER III – HAZARDOUS DUTY

The Number and Average Annual Compensation of Active Employees
By Age and Service as of June 30, 2014

Age	Years of Service							Total	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25	126							126	$ 5,408,755
25 to 29	602	2						604	28,284,679
30 to 34	401	4	1					406	19,541,207
35 to 39	211	4	1					216	10,635,599
40 to 44	119	2	1					122	6,386,356
45 to 49	89	1						90	4,713,886
50 to 54	75							75	4,642,516
55 to 59	22							22	1,172,449
60 to 64	10							10	589,717
65 to 69	3							3	392,979
70 & Up	4							4	196,058
Total	1,662	13	3					1,678	$ 81,964,201

Average Age: 33.2
Average Service: 1.1

Average Salary: $48,846

SCHEDULE G
(Continued)

TIER III – HYBRID PLAN

The Number and Average Annual Compensation of Active Employees
By Age and Service as of June 30, 2014

	Years of Service							Total	
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25	13							13	$ 500,039
25 to 29	67							67	2,880,555
30 to 34	88	5	3					96	5,074,252
35 to 39	55	10	16	2	4	1	1	89	5,497,651
40 to 44	67	19	17	19	4	2	4	132	8,830,795
45 to 49	65	10	33	21	14	9	9	161	13,396,022
50 to 54	48	18	28	35	32	30	29	220	19,450,417
55 to 59	34	15	41	46	49	30	44	259	24,405,428
60 to 64	17	19	31	42	28	28	42	207	21,603,721
65 to 69	4	8	14	11	16	13	39	105	12,272,293
70 & Up	1		4	3	1	3	9	21	2,677,595
Total	459	104	187	179	148	116	177	1,370	$ 116,588,768

Average Age: 50.5
Average Service: 14.8

Average Salary: $85,101

SCHEDULE G
(Continued)

TIER III – ALL OTHERS

The Number and Average Annual Compensation of Active Employees
By Age and Service as of June 30, 2014

Age	Years of Service							Total	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25	679	1						680	$ 14,587,436
25 to 29	1,156	1						1,157	47,046,730
30 to 34	917	5	4					926	42,489,721
35 to 39	677	4		1	1			683	35,059,897
40 to 44	580	3	3					586	28,949,439
45 to 49	592	3	3					598	30,134,719
50 to 54	510	2	3	1	1	4		521	24,500,433
55 to 59	387	1	1					389	18,612,139
60 to 64	183			1			1	185	8,471,229
65 to 69	75	2						77	3,226,323
70 & Up	32	1						33	942,514
Total	5,788	23	14	3	2	4	1	5,835	$ 254,020,580

Average Age: 38.0
Average Service: 1.3

Average Salary: $43,534

SCHEDULE G
(Continued)

NUMBER OF RETIRED MEMBERS AND THEIR BENEFITS BY AGE

Age	Number	Total Annual Benefits	Average Annual Benefits
Under 50	1,335	$ 57,020,385	$ 42,712
50 – 54	1,649	73,984,449	44,866
55 – 59	4,027	159,428,882	39,590
60 – 64	6,599	267,889,664	40,595
65 – 69	8,327	310,181,741	37,250
70 – 74	6,676	232,661,122	34,850
75 – 79	4,764	159,358,493	33,451
80 – 84	3,662	112,100,323	30,612
85 – 89	2,610	71,972,975	27,576
90 – 94	1,249	30,035,960	24,048
95 & Over	352	7,737,538	21,982
Total	41,250	$ 1,482,371,532	$ 35,936

NUMBER OF BENEFICIARIES AND THEIR BENEFITS BY AGE

Age	Number	Total Annual Benefits	Average Annual Benefits
Under 50	301	$ 5,938,944	$ 19,731
50 – 54	122	2,845,381	23,323
55 – 59	211	5,052,335	23,945
60 – 64	320	8,498,332	26,557
65 – 69	452	11,503,457	25,450
70 – 74	589	12,875,051	21,859
75 – 79	643	12,549,250	19,517
80 – 84	719	13,779,455	19,165
85 – 89	661	11,980,566	18,125
90 – 94	411	7,240,360	17,616
95 & Over	124	1,971,359	15,898
Total	4,553	$ 94,234,490	$ 20,697

SCHEDULE G
(Continued)

NUMBER OF DEFERRED VESTED MEMBERS AND THEIR BENEFITS BY AGE

Age	Number	Total Annual Benefits	Average Annual Benefits
Under 50	613	$ 7,975,982	$ 13,011
50 – 54	526	8,794,789	16,720
55 – 59	216	3,058,662	14,160
60 – 64	79	871,747	11,035
65 – 69	18	211,568	11,754
70 – 74	4	31,806	7,952
75 – 79	1	11,808	11,808
80 – 84	0	0	0
85 – 89	0	0	0
90 – 94	0	0	0
95 & Over	0	0	0
Total	1,457	$ 20,956,362	$ 14,383

SCHEDULE H

ANALYSIS OF FINANCIAL EXPERIENCE

Gains & Losses in Accrued Liabilities Resulting from Difference Between Assumed Experience & Actual Experience ($ Millions)

Type of Activity	$ Gain (or Loss) For Two Year Period Ending 6/30/2014	$ Gain (or Loss) For One Year Period Ending 6/30/2012
Age & Service Retirements. If members retire at older ages, there is a gain. If younger ages, a loss.	$ (286.9)	$ (2.5)
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	(31.2)	(30.8)
Death-in Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	(17.3)	(8.8)
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	(29.3)	(3.6)
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	(231.3)	(127.5)
New Members. Additional unfunded accrued liability will produce a loss.	(310.2)	(15.1)
Net Change on Tier III-Hybrid Transfers. Includes $205.0 million in liabilities offset by $154.9 million in asset transfers.	(50.1)	N/A
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	(333.3)	(772.6)
Death After Retirement. If retirants live longer than assumed, there is a loss. If not as long, a gain.	(65.3)	(21.2)
Other. Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	(26.4)	94.1
Gain (or Loss) During Year From Financial Experience	$ (1,381.3)	$ (888.0)
Non-Recurring Items. Adjustments for plan amendments, assumption changes, or method changes.	(193.4)	(1,213.0)
Composite Gain (or Loss) During Year	$ (1,574.7)	$ (2,101.0)

SCHEDULE I

ACTUARIAL SURPLUS TEST

Section 5-162(h) of the General Statutes of Connecticut provides that the Retirement Commission may grant additional Cost-of-Living Adjustments (COLAs) for retired members if an actuarial surplus exists. An actuarial surplus is deemed to exist if three criteria are met.

I. ***Investment Income:*** The actual rate of return for the Fiscal Year ending on the valuation date must exceed the actuarial interest rate assumption.

Market Value of Assets on June 30, 2013: (A)	$9,182,442,986
Market Value of Assets on June 30, 2014: (B)	$10,472,567,077
Investment Income for FY 2013-2014: (I)	$1,440,787,413
Actual Rate of Return for FY 2013-2014: 2I / (A + B – I)	15.82%
Actuarial Interest Rate Assumption:	8.00%

Actual return of 15.82% is greater than the assumed 8.00%, so the first criterion is met.

II. ***Assets vs. Liabilities:*** Market value of assets must exceed 50% of specified liabilities.

Market Value of Assets on June 30, 2014:	$10,472,567,077
Specified Liabilities on June 30, 2014:	
Liability for Retired Members	$17,903,943,137
Liability for Terminated Vested Members	$225,853,075
Liability for Member Contributions with Interest	$946,122,264
Total	$19,075,918,476
50% of Specified Liabilities	$9,537,959,238

Market Value exceeds 50% of specified liabilities so the second criterion is met.

III. ***Unfunded Liability***: Actual unfunded liability must be less than the projected unfunded liability five years from the determination date.

Actual Unfunded Liability on June 30, 2014:	$14,920,814,520
Projected Unfunded Liability on June 30, 2019 (see next page):	$3,965,612,000

Actual Unfunded Liability is not less than Projected Unfunded Liability so the third criterion is not met and therefore, no actuarial surplus exists.

SCHEDULE I
(continued)

ACTUARIAL SURPLUS TEST
PROJECTION OF UNFUNDED LIABILITY

Section 5-162-h(b)(2) of the General Statutes of Connecticut specifies the means of calculating the Projected Unfunded Liability used in the third criterion of the Actuarial Surplus Test. The projection reflects the actual unfunded liability as of December 31, 1983 adjusted for changes in actuarial assumptions and cost methods through the determination date. No provision is made in the Statute for reflecting the impact of plan changes. The projection below reflects the following changes: data correction (June 30, 1987); change in actuarial assumptions (June 30, 1987); change in actuarial cost method (June 30, 1988); change in actuarial assumptions - interest rate only (June 30, 1989); change in actuarial cost method – amortization period only (June 30, 1992); change in actuarial assumptions (June 30, 1993); change in actuarial cost method – level percent amortization (June 30, 1997); change in actuarial methods and assumptions (June 30, 2000); change in actuarial assumptions (June 30, 2004); change in actuarial assumptions (June 30, 2008); change in actuarial assumptions (June 30, 2012).

Year	($000) June 30 Unfunded Liability	Year	($000) June 30 Unfunded Liability	Year	($000) June 30 Unfunded Liability
1987	$2,524,556	2002	$2,360,589	2017	$4,098,934
1988	1,954,257	2003	2,429,273	2018	4,041,779
1989	1,432,333	2004	2,502,591	2019	3,965,612
1990	1,939,758	2005	2,569,504	2020	3,868,369
1991	1,930,524	2006	2,634,814	2021	3,747,804
1992	1,920,505	2007	2,698,021	2022	3,601,467
1993	1,794,192	2008	2,823,251	2023	3,426,692
1994	1,787,586	2009	2,861,884	2024	3,220,576
1995	1,780,419	2010	2,895,933	2025	2,979,962
1996	1,772,643	2011	2,924,709	2026	2,701,414
1997	1,764,205	2012	4,160,465	2027	2,381,197
1998	1,835,087	2013	4,172,971	2028	2,015,249
1999	1,907,249	2014	4,174,465	2029	1,599,160
2000	2,222,296	2015	4,163,616	2030	1,128,134
2001	2,291,494	2016	4,138,969	2031	596,965
				2032	0

SCHEDULE J

PROJECTION OF UNFUNDED ACCRUED LIABILITY

Valuation Year	Unfunded Accrued Liability ($ in thousands)	Amortization Period	Amortization Payment ($ in thousands)
2014	$14,920,815	17	$1,235,655
2015	14,831,633	16	1,281,918
2016	14,763,050	15	1,336,769
2017	14,461,621	14	1,377,793
2018	14,120,903	13	1,422,590
2019	13,844,071	12	1,483,377
2020	13,499,487	11	1,548,974
2021	13,065,151	10	1,618,553
2022	12,528,921	9	1,692,461
2023	11,878,546	8	1,771,323
2024	11,100,434	7	1,856,032
2025	10,179,261	6	1,947,913
2026	9,097,547	5	2,049,092
2027	7,835,042	4	2,163,381
2028	6,367,663	3	2,298,777
2029	4,665,447	2	2,477,019
2030	2,687,721	1	2,797,821
2031	0		