



**CONNECTICUT STATE EMPLOYEES  
RETIREMENT SYSTEM**

**REPORT OF THE ACTUARY ON THE VALUATION  
PREPARED AS OF JUNE 30, 2010  
(Revised)**



**Cavanaugh Macdonald**  
CONSULTING, LLC

*100 Water Street, Suite 2000, New Haven, CT 06510*



**Cavanaugh Macdonald**  
CONSULTING, LLC  
*The experience and dedication you deserve*

November 15, 2010

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, 2010. The report indicates that annual employer contributions at the rate of 31.06% of compensation for the fiscal year ending June 30, 2012 are 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 Board are in the aggregate reasonably related to the experience under the System and to reasonable expectations of anticipated experience under the System. The assumptions and methods used for funding purposes meet the parameters set for the disclosures presented in the financial section by Governmental Accounting Standards Board (GASB) Statement Nos. 25 and 27. 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 21-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.

3550 Busbee Pkwy, Suite 250, Kennesaw, GA 30144

Phone (678) 388-1700 • Fax (678) 388-1730

[www.CavMacConsulting.com](http://www.CavMacConsulting.com)

Offices in Englewood, CO • Kennesaw, GA • Hilton Head Island, SC



Members of the Commission  
November 15, 2010  
Page 2

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,

A handwritten signature in cursive script, appearing to read 'Thomas J. Cavanaugh'.

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

A handwritten signature in cursive script, appearing to read 'John J. Garrett'.

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

A handwritten signature in cursive script, appearing to read 'Edward J. Koebel'.

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

TJC/KC



## TABLE OF CONTENTS

<u>Section</u>	<u>Item</u>	<u>Page No.</u>
I	Summary of Principal Results	1
II	Membership	4
III	Assets	6
IV	Comments on Valuation	6
V	Contributions Payable by Employers	7
VI	Accounting Information	9
VII	Experience	11
 <u>Schedule</u>		
A	Results of Valuation	12
B	Development of Actuarial Value of Assets	13
C	Summary of Receipts and Disbursements	14
D	Outline of Actuarial Assumptions and Methods	15
E	Actuarial Cost Method	19
F	Summary of Main Plan Provisions as Interpreted for Valuation Purposes	20
G	Tables of Membership Data	25
H	Analysis of Financial Experience	35
I	Actuarial Surplus Test	36



**CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM  
REPORT OF THE ACTUARY  
ON THE VALUATION  
PREPARED AS OF JUNE 30, 2010**

**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, 2010	June 20, 2008
Number of active members	50,064	53,196
Annual compensation	\$ 3,295,665,691	\$ 3,497,444,647
Retired members and beneficiaries:		
Number	41,782	38,093
Annual allowances	\$ 1,264,025,423	\$ 1,047,479,000
Deferred Vested Members:		
Number	1,602	1,592
Annual allowances	\$ 24,526,551	\$ 24,232,000
Assets:		
Market Value	\$ 7,791,337,413	\$ 9,329,175,038
Actuarial Value	\$ 9,349,604,896	\$ 9,990,247,212
Unfunded actuarial accrued liability	\$ 11,704,591,789	\$ 9,253,125,542
Amortization period (years)	21	23
Funded Ratio	44.4%	51.9%
<b>For Fiscal Year Ending</b>	<b>June 30, 2012</b>	<b>June 30, 2010</b>
Annual Required Employer Contribution (ARC):		
Normal	\$ 296,567,797	N/A
Accrued liability	<u>726,883,275</u>	<u>N/A</u>
Total	\$ 1,023,451,072	\$ 897,428,085
Annual Required Employer Contribution Rates (ARC):		
Normal	9.00%	N/A
Accrued liability	<u>22.06%</u>	<u>N/A</u>
Total	31.06%	24.67%

2. All amounts shown that were developed as a result of valuations prior to June 30, 2010 were developed and/or reported by the prior actuarial firm.



3. The results of the valuation are given in Schedule A.
4. 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.
5. There were no changes made to the actuarial assumptions, actuarial methods or benefit provisions since the last valuation. However, we have recalculated the actuarial value of assets for the past 4 years using the methodology described in Schedule D of this report, where the actuarial value of assets recognizes 20% of the difference between the market value of assets and the expected actuarial value of assets.
6. Schedule B of this report presents the development of the actuarial value of assets. Schedule D details the actuarial assumptions and methods employed. Schedule F gives a summary of the benefit and contribution provisions of the plan.
7. 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
2004	47,926	\$2,816,729	\$58,772	N/A	36,749	1.3	\$880,771	31.3%	\$15,128,502	\$8,238,418	\$6,890,084
2005	48,919	2,980,104	60,919	3.7	36,705	1.3	906,226	30.4	15,987,547	8,517,679	7,469,867
2006	50,605	3,107,928	61,415	0.8	36,964	1.4	942,054	30.3	16,830,349	8,951,393	7,878,956
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	19,243,373	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

\*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, 2010 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	158	\$15,856,831	\$100,360	54.0	26.6
Tier I – Plan B	4,110	345,529,950	84,071	54.8	28.8
Tier I – Plan C	173	13,212,790	76,375	56.9	30.0
Tier II – Hazardous	4,367	358,763,234	82,153	47.2	17.4
Tier II – Others	15,120	1,113,147,078	73,621	51.0	19.3
Tier IIA – Hazardous	6,185	387,988,113	62,730	39.2	6.6
Tier IIA – Others	19,951	1,061,167,695	53,189	43.3	5.7
Total	50,064	\$3,295,665,691	\$65,829	46.5	13.0

\*Years

Of the 50,064 active members, 36,649 are vested and 13,415 are non-vested.



### Retired Lives

Type of Benefit Payment	No.	Annual Benefits	Group Averages	
			Benefit	Age*
Retired - Pre 1980	2,101	\$35,395,069	\$16,847	86.8
Retired - 1980 - 1997	19,106	533,055,433	27,900	75.8
Retired - 1997+	20,575	695,574,921	33,807	62.2
Total	41,782	\$1,264,025,423	\$30,253	68.9

\*Years

This valuation also includes 1,602 deferred vested members with estimated annual benefits of \$24,526,551.



### SECTION III - ASSETS

1. As of June 30, 2010, the total market value of assets amounted to \$7,791,337,413 as reported by the Comptroller's Office. This amount includes \$2,087,879 of receivables as of the valuation date. The actuarial value of assets used for the current valuation was \$9,349,604,896. Schedule B shows the development of the actuarial value of assets as of June 30, 2010.
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, 2010. 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 \$21,054,196,685, of which \$14,073,811,910 is for the benefits payable on account of present retired members, beneficiaries of deceased members, and inactive members entitled to deferred vested benefits, and \$6,980,384,775 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 \$9,349,604,896 as of June 30, 2010. When this amount is deducted from the actuarial accrued liability of \$21,054,196,685, there remains \$11,704,591,789 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



9.00% of active members' compensation are required to provide the currently accruing benefits of the System.

4. Accrued liability contributions of 22.06% of payroll are required to be made to amortize the unfunded accrued liability within 21 years from the valuation date.

**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 2011/2012 fiscal year.

Contribution for		Contribution Amount	Contribution Rate
A.	Normal Cost:		
	Service retirement benefits	\$353,789,691	10.73%
	Disability benefits	2,993,770	0.09%
	Survivor benefits	<u>3,064,180</u>	<u>0.10%</u>
	Total Normal Cost	\$359,847,641	10.92%
B.	Less Member Contributions	(63,279,844)	(1.92)%
C.	Employer Normal Cost	\$296,567,797	9.00%
D.	Unfunded Actuarial Accrued Liabilities (21 year level percent of payroll amortization)	\$840,967,260	25.52%
E.	SEBAC IV Adjustment	(47,290,050)	(1.43)%
F.	SEBAC V Adjustment	(66,793,935)	(2.03)%
G.	Net Unfunded Actuarial Accrued Liabilities	\$726,883,275	22.06%
H.	Total (C. + G.)	\$1,023,451,072	31.06%



The following table shows the estimated rates of contributions payable by the employer for the next two fiscal years. These results assume an 8.25% investment return on actuarial value of assets for the two years following the valuation date, and 4.00% annual growth in the compensation of active members.

Contribution for	2012/2013		2013/2014	
	As % of Pay	\$	As % of Pay	\$
Employer Normal Cost	8.83%	\$302,692,046	8.73%	\$311,163,485
Unfunded Actuarial Accrued Liabilities	21.66%	742,302,976	22.85%	814,400,858
Total	30.49%	\$1,044,995,022	31.58%	\$1,125,564,343



**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, 2010**

<b>GROUP</b>	<b>NUMBER</b>
Retirees and beneficiaries currently receiving benefits	41,782
Terminated employees entitled to benefits but not yet receiving benefits	1,602
Active plan members	<u>50,064</u>
Total	93,448

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

**SCHEDULE OF FUNDING PROGRESS**  
(Dollar amounts in thousands)

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) - PUC (b)</b>	<b>Unfunded AAL (UAAL) (b - a)</b>	<b>Funded Ratio (a / b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll ((b - a) / c)</b>
6/30/2006	\$8,951,393	\$16,830,349	\$7,878,956	53.2%	\$3,107,928	253.5%
6/30/2007	9,584,970	17,888,065	8,303,095	53.6	3,310,351	250.8
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

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).

<b>Fiscal Year Ending June 30</b>	<b>Valuation Date Ending June 30</b>	<b>Annual Required Contribution</b>	<b>Actual Contribution</b>	<b>Percentage Contributed</b>
2009	2006	\$ 753,698	\$ 699,770	92.8%
2010	2008	897,428	720,527	80.3
2011	2008	944,077	N/A	N/A
2012	2010	1,023,451	N/A	N/A

All figures before the fiscal year ending 6/30/2010 were reported by the prior actuarial firm.

4. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at June 30, 2010. Additional information as of the latest actuarial valuation follows.

Valuation date	6/30/2010
Actuarial cost method	Projected Unit Credit
Amortization method	Level percent of payroll, closed
Remaining amortization period	21 years
Asset valuation method	5-year smoothed actuarial value
Actuarial assumptions:	
Investment rate of return*	8.25%
Projected salary increases*	4.00% - 20.00%
Cost-of-living adjustments	2.70% - 3.60%
Social Security Wage Base	3.50%
*Includes inflation at	4.00%



**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, 2010 is shown below.

	<u>\$ Millions</u>
(1) UAAL* as of June 30, 2008	\$ 9,253.1
(2) Normal cost from 2008 valuation	335.3
(3) Expected employer contributions during 2009 fiscal year	753.7
(4) Interest accrual: $(1) \times .0825 + [(2) - (3)] \times .0404$	<u>746.5</u>
(5) Expected UAAL as of Jun 30, 2009: $(1) + (2) - (3) + (4)$	9,581.2
(6) Normal cost for 2009 fiscal year	340.9
(7) Expected employer contributions during 2010 fiscal year	897.4
(8) Interest accrual: $(5) \times .0825 + [(6) - (7)] \times .0404$	<u>768.0</u>
(9) Expected UAAL as of June 30, 2010: $(5) + (6) - (7) + (8)$	9,792.7
(10) Actual UAAL as of June 30, 2010	\$ 11,704.6
(11) Gain/(loss): $(9) - (10)$	(1,911.9)
(12) Gain/(loss) as percent of actuarial accrued liabilities at June 30, 2008 (\$19,243.4)	(9.9)%

\*Unfunded actuarial accrued liability.

Valuation Date June 30	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2010	(9.9)%



**SCHEDULE A**  
**RESULTS OF VALUATION**  
**PREPARED AS OF JUNE 30, 2010**

	<b>JUNE 30, 2010</b>
<b>1. ACTUARIAL ACCRUED LIABILITY</b>	
Present value of prospective benefits payable in respect of:	
(a) Present active members	
- Tier I – Hazardous Duty	\$107,630,903
- Tier I – Plan B	1,846,504,007
- Tier I – Plan C	71,283,259
- Tier II – Hazardous Duty	1,370,486,164
- Tier II – All Others	2,421,232,785
- Tier IIA – Hazardous Duty	475,050,027
- Tier IIA – All Others	<u>688,197,630</u>
- Total actives	6,980,384,775
(b) Present inactive members and members entitled to deferred vested benefits:	247,985,785
(c) Present annuitants and beneficiaries	<u>13,825,826,125</u>
(d) Total actuarial accrued liability [1(a) + 1(b) + 1(c)]	\$ 21,054,196,685
<b>2. ACTUARIAL VALUE OF ASSETS</b>	<u>\$ 9,349,604,896</u>
<b>3. UNFUNDED ACTUARIAL ACCRUED LIABILITY [1(d) – 2]</b>	\$11,704,591,789



**SCHEDULE B**

**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS**

	<b>June 30, 2010</b>	<b>June 30, 2009</b>
(1) Actuarial Value Beginning of Year*	\$10,396,915,613	\$10,424,967,238
(2) Market Value End of Year**	7,791,337,413	7,322,633,689
(3) Market Value Beginning of Year	7,322,633,689	9,329,175,038
(4) Cash Flow		
(a) Contributions**	788,276,952	772,905,682
(b) Disbursements	<u>(1,272,121,344)</u>	<u>(1,070,474,029)</u>
(c) Net: (4)(a) + (4)(b)	(483,844,392)	(297,568,347)
(5) Investment Income		
(a) Market Total: (2) – (3) – (4)(c)	952,548,116	(1,708,973,002)
(b) Assumed Rate	8.25%	8.25%
(c) Amount for Immediate Recognition: [(1) x (5)(b)] + [(4)(c) less Receivable**] x (5)(b) x 0.5	837,700,832	847,690,676
(d) Amount for Phased-In Recognition: (5)(a) – (5)(c)	114,847,284	(2,556,663,678)
(6) Phased-In Recognition of Investment Income		
(a) Current Year: (5)(d) x 0.20	22,969,457	(511,332,736)
(b) First Prior Year	(511,332,736)	(261,611,703)
(c) Second Prior Year	(261,611,703)	142,906,034
(d) Third Prior Year	142,906,034	32,097,206
(e) Fourth Prior Year	<u>32,097,206</u>	<u>19,767,245</u>
(f) Total Recognized Investment Gain	(574,971,742)	(578,173,954)
(7) Preliminary Actuarial Value End of Year: (1) + (4)(c) + (5)(c) + (6)(f)	10,175,800,311	10,396,915,613
(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)	9,349,604,896	8,787,160,426
(9) Difference Between Market & Actuarial Values: (2) – (8)	\$(1,558,267,483)	\$(1,464,526,738)
(10) Rate of Return on Preliminary Actuarial Value	2.57%	2.60%

\* Before corridor constraints, if applicable and adjusted.

\*\* Includes receivables of: \$2,087,879 at 6/30/2010 and \$2,289,137 at 6/30/2009.



SCHEDULE C

**SUMMARY OF RECEIPTS AND DISBURSEMENTS  
(Market Value)**

	YEAR ENDING	
	June 30, 2010	June 30, 2009
<u>Receipts for the Year</u>		
Contributions:		
Members	\$ 65,662,494	\$ 70,846,685
State	548,509,904	526,231,009
Federal (Net of Transfers)	<u>172,016,675</u>	<u>173,538,851</u>
Subtotal	\$ 786,189,073	\$ 770,616,545
Amount Receivable	2,087,879	2,289,137
Investment Earnings	<u>952,548,116</u>	<u>(1,708,973,002)</u>
TOTAL	\$ 1,740,825,068	\$ (936,067,320)
<u>Disbursements for the Year</u>		
Benefit Payments	\$ 1,263,784,641	\$ 1,063,286,151
Refunds to Members	<u>8,336,703</u>	<u>7,187,878</u>
TOTAL	\$ 1,272,121,344	\$ 1,070,474,029
<u>Excess of Receipts over Disbursements</u>	\$ 468,703,725	\$ (2,006,541,349)
<u>Reconciliation of Asset Balances</u>		
Asset Balance as of the Beginning of Year	\$ 7,322,633,689	\$ 9,329,175,038
Excess of Receipts over Disbursements	<u>468,703,725</u>	<u>(2,006,541,349)</u>
Asset Balance as of the End of Year	\$ 7,791,337,413	\$ 7,322,633,689
Rate of Return	13.45%	-18.62%



**SCHEDULE D**

**OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS**

Adopted or reaffirmed by the Commission for the June 30, 2010 and later valuations.

**VALUATION INTEREST RATE:** 8.25% per annum, compounded annually, net of expenses.

**SALARY INCREASES:**

<b>Years of Service</b>	<b>Rate</b>
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:**

<b>Group</b>	<b>Rate</b>
Pre July 1, 1980 Retirees	3.60%
1980 – 1997 Retirees	3.00%
Post July 1, 1997 Retirees	2.70%

**SOCIAL SECURITY WAGE BASE INCREASES:** 3.50% per annum.

**PAYROLL GROWTH ASSUMPTION:** 4.00% 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*								
Age	Years of Service							
	0	1	2	3	4	5	6-9	10+
<b>Men</b>								
20	30%	60%	60%	20%	20%	15%	5%	5.0%
25	30	30	20	10	10	8	4	5.0
30	25	25	18	10	10	8	4	4.0
35	25	25	16	10	10	8	4	3.0
40	25	25	14	10	10	6	4	2.5
45	25	25	12	10	10	6	4	2.2
50	25	25	12	10	10	6	4	1.5
55+	25	25	12	10	10	6	4	0.0
<b>Women</b>								
20	30%	50%	30%	20%	20%	15%	5%	5.0%
25	25	30	20	16	11	10	5	5.0
30	20	20	16	12	11	9	5	4.0
35	20	20	12	9	10	8	4	3.0
40	15	18	10	9	7	5	4	2.5
45	15	18	10	9	7	5	3	2.0
50	15	18	10	9	7	5	3	1.5
55+	15	18	10	9	7	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		
	Hazardous	All Others
In Service	0.45% at all ages	0.14% at all ages
Non Service	30% of 1975 Social Security Table	



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

Annual Rates of Retirement			
Hazardous Employees			
Age	First Year Eligible For		All Other Ages
Less than 44	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%
Non-Hazardous Employees			
Age	Reduced Benefits	Unreduced Benefits*	All Other Ages
55	15.0%	15.0%	12.5%
56-59	10.0%	15.0%	12.5%
60	10.0%	25.0%	12.5%
61	20.0%	25.0%	15.0%
62	20.0%	10.0%	30.0%
63	20.0%	35.0%	25.0%
64	20.0%	45.0%	25.0%
65-69	50.0%	65.0%	25.0%
70-79	50.0%	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 and 25 years for women 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	.096%	.048%	65	1.031%	.856%
45	.124	.075	70	1.770	1.477
50	.163	.109	75	3.062	2.299
55	.272	.222	80	5.536	3.849
60	.530	.446	85	9.968	6.663

75% (men) and 115% (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 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:

	<u>Minimum</u>	<u>Maximum</u>
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 8.25%), 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.   |

**Final Average Earnings (FAE)**

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.

**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 – 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.



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 and IIA 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 and IIA All Others – 1.333% of FAE plus 0.50% 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

Tier I Hazardous – None.

Tier I – Age 55 with 10 years of service

Tier II and IIA – Age 55 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 and IIA – 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.



## 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 and IIA

Prior to age 65 and due to service or 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.

### 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.

## 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 and IIA

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 and IIA

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

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.



**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 – Hazardous	5% of earnings.
Tier IIA – All Others	2% of earnings.



**SCHEDULE G**

**TABLES OF MEMBERSHIP DATA**

**STATUS RECONCILIATION OF ACTIVE MEMBERS**

	<b>Total</b>
As of June 30, 2008	53,196
Retirements	(4,987)
Disability	(345)
Terminated Vested	(104)
Terminated Non-Vested	(9)
Deaths	(115)
Rehires	22
New Participants	5,285
Refunds	(2,879)
As of June 30, 2010	50,064

**STATUS RECONCILIATION OF INACTIVE MEMBERS**

	<b>Retirees</b>	<b>Disability</b>	<b>Survivor</b>	<b>Deferred Vested</b>	<b>Total</b>
As of June 30, 2008	30,484	3,690	3,919	1,592	39,685
Retirements	180			(180)	0
Disability	27	(27)			0
Deaths	(627)	(83)	(121)		(831)
Rehires	(5)			(17)	(22)
Refunds				(6)	(6)
Certain Period Ended			(18)		(18)
Data Corrections	(1,152)	(50)	233	109	(860)
From Active	4,987	345		104	5,436
As of June 30, 2010	33,894	3,875	4,013	1,602	43,384



**SCHEDULE G**  
**(Continued)**

**TIER I – HAZARDOUS DUTY**

**The Number and Average Annual Compensation of Active Employees  
By Age and Service as of June 30, 2010**

Age	Years of Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
45 to 49	0	0	1	0	0	3	11	1	0	16
Avg. Pay	0	0	\$75,737	0	0	\$84,550	\$92,926	\$84,549	0	\$89,757
50 to 54	0	3	3	3	1	4	47	17	0	78
Avg. Pay	0	\$107,117	\$49,082	\$72,217	\$91,831	\$147,626	\$105,864	\$96,223	0	\$102,295
55 to 59	0	0	0	1	7	4	14	21	6	53
Avg. Pay	0	0	0	\$119,264	\$91,848	\$96,107	\$98,107	\$98,645	\$123,528	\$100,619
60 to 64	0	0	0	0	3	0	1	1	1	6
Avg. Pay	0	0	0	0	\$74,462	0	\$104,440	\$94,402	\$119,004	\$90,206
65 to 69	0	0	0	0	1	0	0	2	1	4
Avg. Pay	0	0	0	0	\$67,365	0	0	\$165,846	\$81,887	\$120,236
70 & Up	0	0	0	0	0	0	0	1	0	1
Avg. Pay	0	0	0	0	0	0	0	\$86,738	0	\$86,738
Total	0	3	4	4	12	11	73	43	8	158
Avg. Pay	0	\$107,117	\$55,746	\$83,979	\$85,460	\$111,689	\$102,407	\$100,109	\$117,757	\$100,360

Average Age: 54.0  
Average Service: 26.6



**SCHEDULE G**  
(Continued)

**TIER I – PLAN B**

**The Number and Average Annual Compensation of Active Employees  
By Age and Service as of June 30, 2010**

Age	Years of Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	1	0	0	1
Avg. Pay	0	0	0	0	0	0	\$78,411	0	0	\$78,411
45 to 49	0	5	7	11	14	16	334	39	0	426
Avg. Pay	0	\$39,696	\$74,877	\$68,745	\$58,046	\$70,244	\$73,810	\$69,032	0	\$72,207
50 to 54	1	21	25	37	42	83	853	724	23	1,809
Avg. Pay	\$13,475	\$55,286	\$66,885	\$72,127	\$77,076	\$83,565	\$82,243	\$76,245	\$70,950	\$78,869
55 to 59	3	7	25	32	50	56	351	626	116	1,266
Avg. Pay	\$52,754	\$87,423	\$73,980	\$74,733	\$80,491	\$78,151	\$89,978	\$87,491	\$85,925	\$86,675
60 to 64	0	6	12	15	11	12	115	185	83	439
Avg. Pay	0	\$94,130	\$91,349	\$94,066	\$82,314	\$84,637	\$93,109	\$105,818	\$104,844	\$100,180
65 to 69	0	0	1	1	3	3	20	38	39	105
Avg. Pay	0	0	\$79,083	\$154,433	\$87,014	\$70,583	\$87,128	\$112,847	\$118,656	\$108,235
70 & Up	0	0	0	0	0	1	11	18	34	64
Avg. Pay	0	0	0	0	0	\$25,000	\$98,898	\$92,984	\$122,209	\$108,464
Total	4	39	70	96	120	171	1,685	1,630	295	4,110
Avg. Pay	\$42,934	\$65,031	\$74,586	\$76,893	\$77,008	\$80,051	\$83,089	\$84,786	\$98,590	\$84,071

Average Age: 54.8  
Average Service: 28.8



**SCHEDULE G**  
(Continued)

**TIER I – PLAN C**

**The Number and Average Annual Compensation of Active Employees  
By Age and Service as of June 30, 2010**

Age	Years of Service									
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	Total
Under 25	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	9	5	0	14
Avg. Pay	0	0	0	0	0	0	\$76,029	\$69,906	0	\$73,842
50 to 54	0	1	0	3	1	3	24	34	2	68
Avg. Pay	0	\$56,633	0	\$75,861	\$78,073	\$55,700	\$74,812	\$71,397	\$72,709	\$72,026
55 to 59	0	0	1	3	0	4	11	26	3	48
Avg. Pay	0	0	\$77,003	\$76,429	0	\$72,777	\$72,680	\$75,774	\$111,730	\$77,129
60 to 64	0	1	0	0	0	0	4	9	6	20
Avg. Pay	0	\$91,411	0	0	0	0	\$71,213	\$68,180	\$72,367	\$71,204
65 to 69	0	0	0	1	0	0	1	5	2	9
Avg. Pay	0	0	0	\$101,818	0	0	\$132,117	\$93,976	\$83,430	\$96,742
70 & Up	0	0	0	0	0	1	4	2	7	14
Avg. Pay	0	0	0	0	0	\$54,309	\$71,317	\$77,194	\$112,901	\$91,733
Total	0	2	1	7	1	8	53	81	20	173
Avg. Pay	0	\$74,022	\$77,003	\$79,813	\$78,073	\$64,065	\$75,122	\$73,889	\$93,599	\$76,375

Average Age: 56.9  
Average Service: 30.0



**SCHEDULE G**  
(Continued)

**TIER II – HAZARDOUS DUTY**

The Number and Average Annual Compensation of Active Employees  
By Age and Service as of June 30, 2010

Age	Years of Service									
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	Total
Under 25	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
30 to 34	0	1	2	9	0	0	0	0	0	12
Avg. Pay	0	\$71,619	\$60,011	\$69,664	0	0	0	0	0	\$68,218
35 to 39	0	5	7	201	249	2	0	0	0	464
Avg. Pay	0	\$52,812	\$82,197	\$79,609	\$78,339	\$99,229	0	0	0	\$78,762
40 to 44	0	8	21	193	930	211	2	0	0	1,365
Avg. Pay	0	\$73,745	\$75,454	\$82,010	\$83,075	\$89,636	\$80,694	0	0	\$83,763
45 to 49	0	5	15	106	628	355	28	0	0	1,137
Avg. Pay	0	\$84,736	\$70,662	\$82,668	\$78,504	\$95,491	\$88,782	0	0	\$84,373
50 to 54	1	4	11	67	409	162	28	0	0	682
Avg. Pay	\$69,638	\$76,959	\$74,904	\$77,464	\$75,541	\$90,758	\$89,235	0	0	\$79,896
55 to 59	0	2	3	44	251	85	11	1	0	397
Avg. Pay	0	\$72,807	\$89,339	\$76,803	\$77,980	\$91,557	\$99,856	\$84,373	0	\$81,439
60 to 64	0	1	4	25	156	26	7	0	0	219
Avg. Pay	0	\$61,349	\$80,628	\$77,680	\$77,147	\$88,630	\$98,283	0	0	\$79,238
65 to 69	0	1	0	5	54	13	1	0	2	76
Avg. Pay	0	\$98,694	0	\$92,516	\$77,481	\$78,941	\$110,662	0	\$81,671	\$79,546
70 & Up	0	0	0	7	8	0	0	0	0	15
Avg. Pay	0	0	0	\$38,779	\$79,979	0	0	0	0	\$60,752
Total	1	27	63	657	2,685	854	77	1	2	4,367
Avg. Pay	\$69,638	\$72,697	\$75,466	\$79,855	\$79,477	\$92,303	\$91,467	\$84,373	\$81,671	\$82,153

Average Age: 47.2  
Average Service: 17.4



**SCHEDULE G**  
**(Continued)**

**TIER II – ALL OTHERS**

**The Number and Average Annual Compensation of Active Employees  
By Age and Service as of June 30, 2010**

Age	Years of Service									
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	Total
Under 25	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
30 to 34	0	3	13	30	4	0	0	0	0	50
Avg. Pay	0	\$36,918	\$58,945	\$54,666	\$62,065	0	0	0	0	\$55,305
35 to 39	4	15	34	246	243	12	0	0	0	554
Avg. Pay	\$25,991	\$68,278	\$66,149	\$70,107	\$67,980	\$62,183	0	0	0	\$68,392
40 to 44	13	49	66	419	1,038	791	36	0	0	2,412
Avg. Pay	\$60,967	\$55,802	\$65,588	\$73,160	\$74,064	\$67,437	\$65,593	0	0	\$70,934
45 to 49	22	81	93	370	1,004	1,952	428	3	0	3,953
Avg. Pay	\$45,358	\$55,710	\$63,056	\$74,231	\$75,770	\$76,152	\$75,590	\$69,767	0	\$74,911
50 to 54	18	53	90	318	792	1,611	492	7	0	3,381
Avg. Pay	\$25,530	\$53,309	\$66,972	\$69,626	\$74,004	\$76,508	\$79,852	\$84,186	0	\$74,888
55 to 59	11	46	88	274	748	1,158	326	12	10	2,673
Avg. Pay	\$22,687	\$57,002	\$57,773	\$71,976	\$74,976	\$75,991	\$81,329	\$94,892	\$79,608	\$74,899
60 to 64	16	29	50	162	487	621	189	6	16	1,576
Avg. Pay	\$21,105	\$43,693	\$48,264	\$68,184	\$74,605	\$78,412	\$82,923	\$60,487	\$93,864	\$74,637
65 to 69	5	6	16	56	121	134	29	1	3	371
Avg. Pay	\$12,506	\$28,977	\$46,149	\$59,529	\$74,313	\$75,451	\$84,595	\$84,523	\$69,898	\$70,507
70 & Up	10	8	6	22	46	43	12	1	2	150
Avg. Pay	\$30,957	\$11,063	\$19,854	\$50,359	\$55,593	\$67,240	\$63,942	\$16,740	\$116,697	\$53,941
Total	99	290	456	1,897	4,483	6,322	1,512	30	31	15,120
Avg. Pay	\$33,468	\$52,961	\$60,506	\$70,825	\$74,123	\$75,243	\$78,973	\$80,050	\$88,419	\$73,621

Average Age: 51.0  
Average Service: 19.3



**SCHEDULE G**  
**(Continued)**

**TIER IIA – HAZARDOUS DUTY**

**The Number and Average Annual Compensation of Active Employees  
By Age and Service as of June 30, 2010**

Age	Years of Service									
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	Total
Under 25	45	38	0	0	0	0	0	0	0	83
Avg. Pay	\$35,020	\$53,327	0	0	0	0	0	0	0	\$43,402
25 to 29	103	663	85	0	0	0	0	0	0	851
Avg. Pay	\$34,714	\$54,173	\$56,149	0	0	0	0	0	0	\$52,015
30 to 34	60	530	515	164	0	0	0	0	0	1,269
Avg. Pay	\$37,821	\$56,176	\$64,329	\$69,257	0	0	0	0	0	\$60,308
35 to 39	36	371	468	485	1	0	0	0	0	1,361
Avg. Pay	\$40,697	\$58,380	\$66,022	\$73,230	\$48,580	0	0	0	0	\$65,825
40 to 44	34	264	353	402	1	0	0	0	0	1,054
Avg. Pay	\$48,956	\$58,821	\$65,684	\$71,923	\$95,445	0	0	0	0	\$65,833
45 to 49	22	189	219	230	0	0	0	0	0	660
Avg. Pay	\$34,826	\$61,910	\$69,428	\$68,533	0	0	0	0	0	\$65,810
50 to 54	12	105	147	165	0	0	0	0	0	429
Avg. Pay	\$40,519	\$60,159	\$72,034	\$69,919	0	0	0	0	0	\$67,433
55 to 59	3	55	78	111	0	0	0	0	0	247
Avg. Pay	\$50,569	\$66,776	\$71,872	\$67,435	0	0	0	0	0	\$68,484
60 to 64	1	23	40	75	0	0	0	0	0	139
Avg. Pay	\$76,708	\$60,251	\$78,665	\$68,874	0	0	0	0	0	\$70,321
65 to 69	0	7	19	34	0	0	0	0	0	60
Avg. Pay	0	\$59,593	\$70,089	\$64,076	0	0	0	0	0	\$65,457
70 & Up	0	0	4	28	0	0	0	0	0	32
Avg. Pay	0	0	\$68,037	\$48,625	0	0	0	0	0	\$51,052
Total	316	2,245	1,928	1,694	2	0	0	0	0	6,185
Avg. Pay	\$38,073	\$57,193	\$66,461	\$70,412	\$72,013	0	0	0	0	\$62,730

Average Age: 39.2  
Average Service: 6.6



**SCHEDULE G**  
**(Continued)**

**TIER IIA – ALL OTHERS**

**The Number and Average Annual Compensation of Active Employees  
By Age and Service as of June 30, 2010**

Age	Years of Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	302	423	7	0	0	0	0	0	0	732
Avg. Pay	\$29,736	\$18,978	\$42,220	0	0	0	0	0	0	\$23,639
25 to 29	433	1,202	210	8	0	0	0	0	0	1,853
Avg. Pay	\$31,062	\$44,904	\$48,795	\$39,437	0	0	0	0	0	\$42,087
30 to 34	268	1,231	803	280	2	0	0	0	0	2,584
Avg. Pay	\$34,695	\$48,820	\$58,645	\$59,377	\$55,044	0	0	0	0	\$51,557
35 to 39	193	1,097	835	740	5	0	0	0	0	2,870
Avg. Pay	\$32,769	\$50,731	\$60,567	\$66,366	\$57,799	0	0	0	0	\$56,428
40 to 44	199	1,076	850	735	0	1	0	0	0	2,861
Avg. Pay	\$36,434	\$48,957	\$60,051	\$66,362	0	\$62,679	0	0	0	\$55,858
45 to 49	212	1,014	892	675	7	1	1	0	0	2,802
Avg. Pay	\$32,131	\$50,003	\$61,076	\$66,955	\$52,979	\$33,259	\$87,128	0	0	\$56,274
50 to 54	216	898	766	642	0	1	1	0	0	2,524
Avg. Pay	\$33,648	\$51,923	\$62,995	\$68,086	0	\$67,596	\$55,267	0	0	\$57,838
55 to 59	158	649	641	480	1	1	0	0	0	1,930
Avg. Pay	\$29,908	\$51,949	\$64,074	\$69,841	\$113,449	\$70,855	0	0	0	\$58,663
60 to 64	114	371	417	324	1	0	0	0	0	1,227
Avg. Pay	\$22,641	\$48,436	\$59,514	\$68,631	\$64,665	0	0	0	0	\$55,150
65 to 69	55	109	134	108	0	0	0	0	0	406
Avg. Pay	\$23,412	\$38,923	\$56,745	\$67,301	0	0	0	0	0	\$50,253
70 & Up	36	58	39	27	0	0	1	0	1	162
Avg. Pay	\$26,249	\$31,726	\$42,719	\$51,386	0	0	\$86,702	0	\$13,355	\$36,658
Total	2,186	8,128	5,594	4,019	16	4	3	0	1	19,951
Avg. Pay	\$31,529	\$47,432	\$60,269	\$66,720	\$59,253	\$58,597	\$76,366	0	\$13,355	\$53,189

Average Age: 43.3  
Average Service: 5.7



**SCHEDULE G**  
**(Continued)**

**NUMBER OF RETIRED MEMBERS  
AND THEIR BENEFITS BY AGE**

<b>Age</b>	<b>Number</b>	<b>Total Annual Benefits</b>	<b>Average Annual Benefits</b>
Under 50	1,347	\$ 51,345,157	\$ 38,118
50 – 54	1,305	52,040,328	39,878
55 – 59	4,324	164,187,970	37,971
60 – 64	6,771	249,249,734	36,811
65 – 69	6,861	219,679,039	32,019
70 – 74	5,258	160,712,410	30,565
75 – 79	4,455	123,043,244	27,619
80 – 84	3,819	94,843,555	24,835
85 – 89	2,352	51,886,588	22,061
90 – 94	995	18,135,373	18,227
95 & Over	282	5,097,196	18,075
Total	37,769	\$ 1,190,220,594	\$ 31,513

**NUMBER OF BENEFICIARIES  
AND THEIR BENEFITS BY AGE**

<b>Age</b>	<b>Number</b>	<b>Total Annual Benefits</b>	<b>Average Annual Benefits</b>
Under 50	299	\$ 5,365,750	\$ 17,946
50 – 54	112	2,852,695	25,471
55 – 59	188	4,553,158	24,219
60 – 64	289	6,922,201	23,952
65 – 69	397	8,521,723	21,465
70 – 74	489	8,934,686	18,271
75 – 79	599	10,726,814	17,908
80 – 84	677	11,140,538	16,456
85 – 89	598	9,789,547	16,370
90 – 94	274	3,547,800	12,948
95 & Over	91	1,449,917	15,933
Total	4,013	\$ 73,804,829	\$ 18,391



**SCHEDULE G**  
**(Continued)**

**NUMBER OF DEFERRED VESTED MEMBERS  
AND THEIR BENEFITS BY AGE**

<b>Age</b>	<b>Number</b>	<b>Total Annual Benefits</b>	<b>Average Annual Benefits</b>
Under 50	800	\$ 10,993,113	\$ 13,741
50 – 54	554	10,077,934	18,191
55 – 59	147	2,353,433	16,010
60 – 64	86	897,105	10,431
65 – 69	14	193,158	13,797
70 – 74	1	11,808	11,808
75 – 79	0	0	0
80 – 84	0	0	0
85 – 89	0	0	0
90 – 94	0	0	0
95 & Over	0	0	0
Total	1,602	\$ 24,526,551	\$ 15,310



**SCHEDULE H**

**ANALYSIS OF FINANCIAL EXPERIENCE**

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

<b>Type of Activity</b>	<b>\$ Gain (or Loss) For Two Year Period Ending 6/30/2010</b>
<b>Age &amp; Service Retirements.</b> If members retire at older ages, there is a gain. If younger ages, a loss.	\$ (589.6)
<b>Disability Retirements.</b> If disability claims are less than assumed, there is a gain. If more claims, a loss.	(119.9)
<b>Death-in Service Benefits.</b> If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	(24.0)
<b>Withdrawal From Employment.</b> If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	49.5
<b>Pay Increases.</b> If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	389.6
<b>Investment Income.</b> If there is a greater investment income than assumed, there is a gain. If less income, a loss.	(1,503.2)
<b>Death After Retirement.</b> If retirants live longer than assumed, there is a loss. If not as long, a gain.	60.8
<b>Other.</b> Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.*	<u>(175.1)</u>
<b>Gain (or Loss) During Year From Financial Experience</b>	<u>\$ (1,911.9)</u>
<b>Non-Recurring Items.</b> Adjustments for plan amendments, assumption changes, or method changes.	<u>0.0</u>
<b>Composite Gain (or Loss) During Year</b>	<u>\$ (1,911.9)</u>

\*Includes contribution shortfall



**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, 2009: (A)	\$7,322,633,689
Market Value of Assets on June 30, 2010: (B)	\$7,791,337,413
Investment Income for FY 2009-2010: (I)	\$952,548,116
Actual Rate of Return for FY 2009-2010: $2I / (A + B - I)$	13.45%
Actuarial Interest Rate Assumption:	8.25%

Actual return of 13.45% is more than the assumed 8.25%, 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, 2010:	\$7,791,337,413
Specified Liabilities on June 30, 2010:	
Liability for Retired Members	\$13,825,826,125
Liability for Terminated Vested Members	\$247,985,785
Liability for Member Contributions with Interest	\$705,967,726
Total	\$14,779,779,636
50% of Specified Liabilities	\$7,389,889,818

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, 2010:	\$11,704,591,789
Projected Unfunded Liability on June 30, 2015 (see next page):	\$2,970,742,000

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).

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	\$2,938,483
1988	1,954,257	2003	2,429,273	2018	2,904,380
1989	1,432,333	2004	2,502,591	2019	2,856,402
1990	1,939,758	2005	2,569,504	2020	2,792,963
1991	1,930,524	2006	2,634,814	2021	2,712,326
1992	1,920,505	2007	2,698,021	2022	2,612,594
1993	1,794,192	2008	2,823,251	2023	2,491,695
1994	1,787,586	2009	2,861,884	2024	2,347,364
1995	1,780,419	2010	2,895,933	2025	2,177,129
1996	1,772,643	2011	2,924,709	2026	1,978,295
1997	1,764,205	2012	2,947,454	2027	1,747,919
1998	1,835,087	2013	2,963,333	2028	1,482,794
1999	1,907,249	2014	2,971,431	2029	1,179,423
2000	2,222,296	2015	2,970,742	2030	833,996
2001	2,291,494	2016	2,960,162	2031	442,361
				2032	0