



# Cavanaugh Macdonald

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May 12, 2014

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

Dear Brenda:

Enclosed is the "Connecticut Probate Judges and Employees Retirement System Report of the Actuary on the Valuation Prepared as of December 31, 2013".

The valuation indicates that employer contributions at the rate of 8.21% of compensation are sufficient to support the benefits of the System.

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/KC

Enc.

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**CONNECTICUT PROBATE JUDGES  
AND EMPLOYEES RETIREMENT SYSTEM**

**REPORT OF THE ACTUARY ON THE VALUATION  
PREPARED AS OF DECEMBER 31, 2013**





# Cavanaugh Macdonald

CONSULTING, LLC

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May 12, 2014

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

Members of the Commission:

Connecticut General Statutes Title 45a, Chapter 801, Part III governs the operation of the Connecticut Probate Judges and Employees Retirement System. 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 December 31, 2013. The report indicates that annual employer contributions at the rate of 8.21% of compensation for the fiscal year ending June 30, 2015 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.

Since the previous valuation, an experience study was performed and the Commission adopted new economic and demographic assumptions that are used in this valuation.

The System is funded on an actuarial reserve basis. The actuarial assumptions recommended by the actuary and adopted by the Commission 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 dollar amount within a 15-year period.

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.

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Members of the Commission  
May 12, 2014  
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 blue ink that reads 'Thomas J. Cavanaugh'.

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

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

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

A handwritten signature in blue ink that reads 'Edward J. Koebel'.

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

TJC/KC



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**CONNECTICUT PROBATE JUDGES AND EMPLOYEES RETIREMENT SYSTEM  
REPORT OF THE ACTUARY  
ON THE VALUATION  
PREPARED AS OF DECEMBER 31, 2013**

**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	December 31, 2013	December 31, 2011
Number of active members	346	330
Annual compensation	\$ 16,689,104	\$ 15,403,932
Retired members and beneficiaries:		
Number	364	342
Annual allowances	\$ 4,805,711	\$ 4,416,866
Deferred Vested Members:		
Number	21	32
Annual allowances	\$ 232,060	\$ 357,252
Assets:		
Market Value	\$ 86,744,972	\$ 75,955,020
Actuarial Value	87,490,158	85,154,310
Unfunded actuarial accrued liability	\$ (4,873,023)	\$ (12,026,962)
Amortization period (years)	15	17
Funded Ratio	105.9%	116.4%
<b>For Fiscal Year Ending</b>	<b>June 30, 2015</b>	<b>June 30, 2013</b>
Annual Required Employer Contribution (ARC):		
Normal	\$ 1,898,008	1,745,147
Accrued liability	<u>(527,142)</u>	<u>(1,238,407)</u>
Total (not less than zero)	\$ 1,370,866	\$ 506,740
Annual Required Employer Contribution Rates (ARC):		
Normal	11.37%	11.33%
Accrued liability	<u>(3.16)</u>	<u>(8.04)</u>
Total (not less than zero)	8.21%	3.29%

2. 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. An experience investigation was conducted for the four-year period ending December 31, 2011. Based on the results of this study, the Commission has adopted new assumptions since the last valuation.
  - The withdrawal rates, mortality rates, and retirement rates have been revised to more closely reflect the actual experience of the System.
  - The rates of salary increase were decreased from 5.00% to 4.75% for all ages.
  - The investment return assumption was decreased from 8.25% to 8.00%.
  - The inflation assumption was decreased from 3.00% to 2.75%.
  - The Cost of Living Adjustment (COLA) assumption was decreased from 2.50% to 2.30%.
5. 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.
6. The table on the following page provides a history of some pertinent figures.



**Connecticut Probate Judges and Employees Retirement System**

**Comparative Schedule**

Valuation Date December 31	Active Members				Retired Lives				Valuation Results (\$ thousands)		
	Number	Payroll (\$ thousands)	Average Salary	% increase from previous valuation	Number	Active/Retired Ratio	Annual Benefits (\$ thousands)	Benefits as % of Payroll	Accrued Liability	Valuation Assets	UAAL
2006*	389	\$15,781	\$40,567	3.4%	258	1.5	2,717	17.2	N/A	N/A	N/A
2007*	409	16,915	41,357	1.9	277	1.5	2,979	17.6	\$60,631	\$86,325	\$(25,694)
2008*	418	17,683	42,305	2.3	283	1.5	3,137	17.7	59,437	78,213	(18,776)
2009	412	17,959	43,590	3.0	288	1.4	3,156	17.6	61,314	86,776	(25,462)
2011	330	15,404	46,679	7.1	342	1.0	4,417	28.7	73,127	85,154	(12,027)
2013	346	16,689	48,234	3.3	364	1.0	4,806	28.8	82,617	87,490	(4,873)

\*All amounts prior to 2009 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 December 31, 2013 and December 31, 2011 upon which the valuation was based. Detailed tabulations of the data are given in Schedule G.

### **Active Members as of December 31, 2013**

Group	Number	Payroll	Group Averages		
			Salary	Age	Service
Judges	52	\$ 5,449,451	\$ 104,797	57.9	14.4
Employees	294	11,239,653	38,230	49.8	10.4
<b>Total</b>	<b>346</b>	<b>\$ 16,689,104</b>	<b>\$ 48,234</b>	<b>51.1</b>	<b>11.0</b>

Of the 346 active members, 163 are vested and 183 are non-vested.

### **Active Members as of December 31, 2011**

Group	Number	Payroll	Group Averages		
			Salary	Age	Service
Judges	52	\$ 5,047,349	\$ 97,064	57.0	13.6
Employees	278	10,356,583	37,254	49.6	10.2
<b>Total</b>	<b>330</b>	<b>\$ 15,403,932</b>	<b>\$ 46,679</b>	<b>50.8</b>	<b>10.8</b>

Of the 330 active members, 154 are vested and 176 are non-vested.



### Retired Lives as of December 31, 2013

Type of Benefit Payment	No.	Annual Benefits	Group Averages	
			Benefit	Age
Retirement	327	\$ 4,521,976	\$ 13,829	73.7
Survivor	37	283,735	7,669	77.7
Total	364	\$ 4,805,711	\$ 13,203	74.1

This valuation also includes 21 deferred vested members with estimated annual benefits of \$232,060 and 121 non-vested inactive members with employee contribution account balances totaling \$241,710.

### Retired Lives as of December 31, 2011

Type of Benefit Payment	No.	Annual Benefits	Group Averages	
			Benefit	Age
Retirement	306	\$ 4,109,915	\$ 13,431	73.1
Survivor	36	306,951	8,526	76.2
Total	342	\$ 4,416,866	\$ 12,915	72.2

This valuation also includes 32 deferred vested members with estimated annual benefits of \$357,252 and 99 non-vested inactive members with employee contribution account balances totaling \$101,155.

### **SECTION III - ASSETS**

1. As of December 31, 2013, the total market value of assets amounted to \$86,744,972 as reported by the Comptroller's Office. This amount includes \$4,435 of receivables as of the valuation date. The actuarial value of assets used for the current valuation was \$87,490,158. Schedule B shows the development of the actuarial value of assets as of December 31, 2013.
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 December 31, 2013. 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 \$82,617,135, of which \$48,998,975 is for the benefits payable on account of present retired members, beneficiaries of deceased members, and members entitled to deferred vested benefits, and \$33,618,160 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 \$87,490,158 as of December 31, 2013. When this amount is deducted from the actuarial accrued liability of \$82,617,135, there remains \$(4,873,023) as the unfunded actuarial accrued liability. A negative unfunded accrued liability reflects an excess of actuarial value of assets over accrued liability.
  
3. The employer's contributions to the System consist of normal 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 an excess) due to the amortization of the unfunded accrued liability. The valuation indicates that annual employer normal contributions at the rate of 11.37% of active members' compensation are required to provide the currently accruing benefits of the System.
  
4. Accrued liability contributions of (3.16)% of payroll are to be made toward amortizing the unfunded accrued liability. Annual accrued liability credits at the rate of (3.16)% of payroll will amortize the negative unfunded accrued liability within 15 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 for the 2014/2015 and 2013/2014 fiscal years.

Contribution for	2014 / 2015		2013 / 2014	
	Contribution Amount	Contribution Rate	Contribution Amount	Contribution Rate
Normal Cost:				
Service retirement benefits	\$2,041,189	12.23%	\$1,940,048	12.14%
Disability benefits	92,193	0.55%	100,678	0.63%
Survivor benefits	<u>13,503</u>	<u>0.08%</u>	<u>12,784</u>	<u>0.08%</u>
Total	\$2,146,885	12.86%	\$2,053,510	12.85%
Less Member Contributions:	248,877	1.49%	242,920	1.52%
Employer Normal Cost	\$1,898,008	11.37%	\$1,810,590	11.33%
Unfunded Actuarial Accrued Liabilities (15 and 16 year level dollar amortization)	\$(527,142)	(3.16)%	\$(627,409)	(3.93)%
Total (not less than zero)	\$1,370,866	8.21%	\$1,183,181	7.40%



The following table shows the estimated rates of contributions payable by the employer for the next two fiscal years following the valuation date. These results assume an 8.00% investment return on actuarial value of assets for the two years following the valuation date, and 3.75% annual growth in the compensation of active members.

Contribution for	2015/2016		2016/2017	
	As % of Pay	\$	As % of Pay	\$
Employer Normal Cost	11.37%	\$1,969,183	11.37%	\$2,043,027
Unfunded Actuarial Accrued Liabilities	(2.96)%	\$(511,997)	(2.47)%	\$(443,515)
Total (not less than zero)	8.41%	\$1,457,186	8.90%	\$1,599,512

As can be seen in the table above, the employer contributions expressed as a percentage of payroll are expected to remain relatively stable over the next two fiscal years. Of course, higher or lower than expected investment returns could possibly alter this trend.



**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 DECEMBER 31, 2013 AND DECEMBER 31, 2011**

<b>GROUP</b>	<b>2013</b>	<b>2011</b>
Retirees and beneficiaries currently receiving benefits	364	342
Terminated employees entitled to benefits but not yet receiving benefits	142	131
Active plan members	<u>346</u>	<u>330</u>
Total	852	803

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

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

<b>Actuarial Valuation</b>	<b>Actuarial Value of Assets</b>	<b>Actuarial Accrued Liability (AAL) - Projected Unit Credit</b>	<b>Unfunded AAL (UAAL)</b>	<b>Funded Ratio</b>	<b>Covered Payroll</b>	<b>UAAL as a Percentage of Covered Payroll</b>
<b>Date</b>	<b>( a )</b>	<b>( b )</b>	<b>( b – a )</b>	<b>( a / b )</b>	<b>( c )</b>	<b>(( b – a ) / c )</b>
12/31/2009	\$86,776	\$61,314	\$(25,462)	141.5%	\$17,959	(141.8)%
12/31/2011	85,154	73,127	(12,027)	116.4	15,404	(78.1)
12/31/2013	87,490	82,617	(4,873)	105.9	16,689	(29.2)



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

<u>Fiscal Year Ending June 30</u>	<u>Valuation Date Ending December 31</u>	<u>Annual Required Contribution</u>	<u>Percentage Contributed</u>
2013	2011	\$506,740	100%
2014	2011	\$1,183,181	
2015	2013	\$1,370,866	
2016	2013	\$1,457,186	

4. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at December 31, 2013. Additional information as of the latest actuarial valuation follows.

Valuation date	12/31/2013
Actuarial cost method	Projected Unit Credit
Amortization method	Level dollar, closed
Remaining amortization period	15 years
Asset valuation method	5-year smoothed actuarial value
Actuarial assumptions:	
Investment rate of return*	8.00%
Projected salary increases*	4.75%
Cost-of-living adjustments	2.30%
Social Security Wage Base	3.00%
*Includes inflation at	2.75%



**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 year ended December 31, 2013 is shown below.

	<u>\$ Thousands</u>
(1) UAAL* as of December 31, 2011	\$ (12,027.0)
(2) Total normal cost from last valuation	1,979.3
(3) Total actual contributions for 2012	927.8
(4) Interest accrual: (1) x .0825 + [(2) – (3)] x .0404	<u>(949.7)</u>
(5) Expected UAAL as of December 31, 2012: (1) + (2) – (3) + (4)	\$ (11,925.2)
(6) Total normal cost from last valuation	1,979.3
(7) Total actual contributions for 2013	1,165.5
(8) Interest accrual: (5) x .0825 + [(6) – (7)] x .0404	<u>(950.9)</u>
(9) Expected UAAL as of December 31, 2011 before changes: (5) + (6) – (7) + (8)	\$ (12,062.3)
(10) Change due to plan amendments	0.0
(11) Change due to actuarial assumptions or methods	<u>3,211.5</u>
(12) Expected UAAL as of December 31, 2011 after changes: (9) + (10) + (11)	\$ (8,850.8)
(13) Actual UAAL as of December 31, 2013	\$ (4,873.0)
(14) Gain/(loss): (12) – (13)	\$ (3,977.8)
(15) Gain/(loss) as percent of actuarial accrued liabilities at start of year (\$73,127.3)	5.4%

\*Unfunded actuarial accrued liability.

Valuation Date December 31	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2009	12.2%
2011	(22.4)
2013	5.4





**SCHEDULE A**

**RESULTS OF VALUATION**

**PREPARED AS OF DECEMBER 31, 2013 AND DECEMBER 31, 2011**

	<b>DECEMBER 31, 2013</b>	<b>DECEMBER 31, 2011</b>
<b>1. ACTUARIAL ACCRUED LIABILITY</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members		
- Service retirement benefits	\$32,127,776	\$26,163,325
- Disability retirement benefits	1,284,003	1,220,596
- Death and survivor benefits	<u>206,381</u>	<u>162,340</u>
- Total	\$33,618,160	\$27,546,261
(b) Present inactive members and members entitled to deferred vested benefits:	\$2,020,114	\$3,102,914
(c) Present annuitants and beneficiaries	<u>\$46,978,861</u>	<u>\$42,478,173</u>
(d) Total actuarial accrued liability [1(a) + 1(b) + 1(c)]	\$82,617,135	\$73,127,348
<b>2. ACTUARIAL VALUE OF ASSETS</b>	<u>\$87,490,158</u>	<u>\$85,154,310</u>
<b>3. UNFUNDED ACTUARIAL ACCRUED LIABILITY [1(d) – 2]</b>	\$(4,873,023)	\$(12,026,962)



**SCHEDULE B**

**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS**

For the Year Ending December 31	2013	2012
(1) Actuarial Value Beginning of Year*	\$ 83,575,981	\$ 85,154,310
(2) Market Value End of Year**	\$ 86,744,972	\$ 81,592,966
(3) Market Value Beginning of Year	\$ 81,592,966	\$ 75,955,020
(4) Cash Flow		
(a) Contributions	\$ 1,165,501	\$ 927,859
(b) Disbursements	<u>(4,621,970)</u>	<u>(4,455,019)</u>
(c) Net: (4)(a) + (4)(b)	\$ (3,456,469)	\$ (3,527,160)
(5) Investment Income		
(a) Market Total: (2) – (3) – (4)(c)	\$ 8,604,040	\$ 9,160,671
(b) Assumed Rate	8.25%	8.25%
(c) Amount for Immediate Recognition: [(1) x (5)(b)] + [(4)(c) x (5)(b) x 0.5]	\$ 6,752,439	\$ 6,879,735
(d) Amount for Phased-In Recognition: (5)(a) – (5)(c)	1,851,601	2,280,936
(6) Phased-In Recognition of Investment Income		
(a) Current Year: (5)(d) / 5	\$ 370,320	\$ 456,187
(b) First Prior Year	456,187	(1,342,258)
(c) Second Prior Year	(1,342,258)	248,756
(d) Third Prior Year	248,756	880,767
(e) Fourth Prior Year	<u>880,767</u>	<u>(5,178,791)</u>
(h) Total Recognized Investment Gain	\$ 613,772	\$ (4,935,339)
(7) Preliminary Actuarial Value End of Year: (1) + (4)(c) + (5)(c) + (6)(h)	\$ 87,490,158	\$ 83,575,981
(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)	\$ 87,490,158	\$ 83,575,981
(9) Difference Between Market & Actuarial Values: (2) – (8)	\$ (745,186)	\$ (1,983,015)
(10) Rate of Return on Actuarial Value	9.00%	2.33%

\* Before corridor constraints, if applicable and adjusted.

\*\* Includes additional receivables of \$4,435 in 2013 and \$4,435 in 2012.



**SCHEDULE C**

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

	YEAR ENDING	
	December 31, 2013 (\$1,000's)	December 31, 2012 (\$1,000's)
<u>Receipts for the Year</u>		
Contributions:		
Members	\$ 231	\$ 221
Employer	<u>935</u>	<u>707</u>
Subtotal	\$ 1,166	\$ 928
Investment Earnings	8,604	9161
Health Services Allowance	0	0
Other	<u>4</u>	<u>4</u>
TOTAL	\$ 9,774	\$ 10,093
<u>Disbursements for the Year</u>		
Benefit Payments	\$ 4,614	\$ 4,441
Refunds to Members	8	14
Health Services Cost	0	0
Other	<u>0</u>	<u>0</u>
TOTAL	\$ 4,622	\$ 4,455
<u>Excess of Receipts over Disbursements</u>	\$ 5,152	\$ 5,638
<u>Reconciliation of Asset Balances</u>		
Asset Balance as of the Beginning of Year	\$ 81,593	\$ 75,955
Excess of Receipts over Disbursements	<u>5,152</u>	<u>5,638</u>
Asset Balance as of the End of Year	<u>\$ 86,745</u>	<u>\$ 81,593</u>
Rate of Return	10.77%	12.35%



**SCHEDULE D**

**OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS**

Adopted or reaffirmed by the Commission for the December 31, 2013 and later valuations.

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

**SALARY INCREASES:** 4.75% per annum.

**COST OF LIVING ADJUSTMENTS:** 2.30% per annum.

**SOCIAL SECURITY WAGE BASE INCREASES:** 3.00% per annum.

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

Age	Annual Rates of			
	Withdrawal		Death	Disability
	Employees	Judges		
	<b>Men</b>			
20	5.00%	5.00%	.024%	.03%
25	5.00	5.00	.032	.04
30	5.00	2.50	.037	.06
35	5.00	1.25	.059	.08
40	5.00	0.75	.086	.12
45	5.00	0.38	.107	.19
50	5.00	0.00	.142	.31
55	5.00	0.00	.219	.52
60	5.00	0.00	.414	.73
65	5.00	0.00	.810	.00
	<b>Women</b>			
20	7.50%	7.50%	.013%	.03%
25	7.50	7.50	.014	.04
30	5.00	3.75	.019	.06
35	5.00	1.88	.033	.08
40	5.00	1.25	.044	.12
45	5.00	0.63	.069	.19
50	5.00	0.00	.101	.31
55	5.00	0.00	.198	.52
60	5.00	0.00	.392	.73
65	5.00	0.00	.760	.00



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

<u>Age</u>	<u>Annual Rates of Retirement*</u>
50 – 61	5%
62 – 64	10
65 – 69	20
70 +	100

**DEATHS AFTER RETIREMENT:** The RP 2000 Mortality Table projected with Scale AA 15 years for men set back 2 years and projected 25 years for women set back 1 year is used for the period after retirement and for dependent beneficiaries. Based on the results of the most recent experience study adopted by the Commission, the numbers of expected future deaths are 12-14% less than the actual number of deaths that occurred during the study period for healthy retirees. Representative values of the assumed annual rates of mortality are as follows:

<u>Age</u>	<u>Men</u>	<u>Women</u>	<u>Age</u>	<u>Men</u>	<u>Women</u>
40	.086%	.044%	65	.810%	.760%
45	.107	.069	70	1.425	1.311
50	.142	.101	75	2.460	2.083
55	.219	.198	80	4.483	3.482
60	.414	.392	85	8.075	5.981

50% (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.

**NON-VESTED INACTIVE MEMBERS:** The employee contribution account balances as of the valuation date is used as a liability for these members.



## **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 Probate Judges and Employees Retirement System (CT PJERS) is a defined benefit pension plan established by the Connecticut General Assembly for the purpose of providing retirement allowances and other benefits for Probate judges and employees of probate courts in Connecticut, and their survivors and other beneficiaries. Special retirement provisions apply to a judge whose probate district is merged with another district and who has not been elected to a term which begins or is subsequent to such consolidation.

#### Eligibility Requirements

Judges All Judges of Probate (provided one full term is served by age 70).

Employees All persons who are employed by any probate court for more than 430 hours per year.

#### Credited Service

All periods as a Judge of Probate, Acting Judge of Probate, Employee of any probate court, plus a period of not more than 3 years of service as a member of the General Assembly or in the military.

#### Final Average Compensation

*Judges* – average annual compensation for the 3 highest paid years of service in the probate court, provided the compensation for any year does not exceed the maximum net income allowed by law.

*Employees* – the average annual rate of pay during the employee's 3 highest paid years of employment.

#### Normal Retirement Benefit

Eligibility *Judges* - Age 62 and 10 years of service (age 70 mandatory retirement provided one full term is served).

*Employees* - Age 62 and 10 years of service (age 70 mandatory retirement regardless of service).

Benefit *Judges and Employees not covered by Social Security* – 2% of Final Average Compensation times years of Credited Service, minimum \$360 annually.

*Judges and Employees covered by Social Security* – 1% of Final Average Compensation up to \$4,800 plus 2% of Final Average Compensation above \$4,800, times years of Credited Service, minimum \$360 annually.



#### Early Retirement Benefit

Eligibility *Judges and Employees* - 10 years of creditable service.

Benefit Accrued benefit actuarially reduced unless separation occurs after age 60 in which case the reduction is .25% for each month that separation precedes age 62.

#### Disability Retirement Benefit

Eligibility 10 years of creditable service.

Benefit Calculated as a normal retirement benefit

#### Deferred Vested Retirement Benefit

Eligibility 10 years of creditable service.

Benefit Accrued benefit deferred to age 62.

#### Pre-Retirement Spouse's Benefit

Eligibility 10 years of service and married for at least one year.

Benefit Average of 50% of life annuity benefit and 50% of joint and 50% survivor benefit which member would have received had he retired on the date of his death.

#### Termination Benefit

Eligibility Termination with less than 10 years of creditable service.

Benefit Return of the member's accumulated contributions with interest (no interest paid if the termination is due to death).

#### Payment Options

Straight life annuity; 50% or 100% joint and last survivor annuity; 10 or 20 year certain and life annuity.

#### Cost of Living Adjustments

The COLA percentage is based on the average monthly change in the nationwide Consumer Price Index and it is applied annually on July 1 to the previous July 1 benefit amount. The COLA is limited to 3% and no adjustment is made if the change in the CPI is less than 1%.





Contributions

By Members

*Judges and Employees not covered by Social Security – 3.75% of Compensation*

*Judges and Employees covered by Social Security – 1% of Compensation up to the current Social Security Wage Base plus 3.75% of Compensation above the current Social Security Wage Base.*

By Employers

Employer contributions are actuarially determined and approved and certified by the Commission.



**SCHEDULE G**

**TABLES OF MEMBERSHIP DATA**

**STATUS RECONCILIATION OF ACTIVE MEMBERS**

	<b>Judges</b>	<b>Employees</b>	<b>Total</b>
Actives as of December 31, 2011	52	278	330
A. Retirements	(4)	(18)	(22)
B. Terminated Vested		(2)	(2)
C. Terminated Non-Vested		(9)	(9)
D. Deaths	(1)		(1)
E. Rehires	2	1	3
F. New Participants	3	53	56
G. Refunds		(9)	(9)
Actives as of December 31, 2013	52	294	346

**STATUS RECONCILIATION OF INACTIVE MEMBERS**

	<b>Retirees</b>	<b>Survivors</b>	<b>Deferred Vesteds</b>	<b>Inactives</b>	<b>Total</b>
Inactives as of December 31, 2011	306	36	32	99	473
A. Retirements	28		(5)	(1)	22
B. Terminated Vested			2		2
C. Terminated Non-Vested			(7)	16	9
D. Deaths	(7)				(7)
E. Beneficiaries		1			1
F. Rehires			(1)	(2)	(3)
F. Data Corrections				21	21
G. Refunds				(12)	(12)
Inactives as of December 31, 2013	327	37	21	121	506



(Continued)

The Number and Average Annual Compensation of Active Judges  
By Age and Service as of December 31, 2013

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	1	0	0	0	0	0	0	0	1
Avg. Pay	0	112,549	0	0	0	0	0	0	0	112,549
40 to 44	0	0	0	0	1	0	0	0	0	1
Avg. Pay	0	0	0	0	104,797	0	0	0	0	104,797
45 to 49	0	2	1	3	1	0	0	0	0	7
Avg. Pay	0	97,542	107,295	106,746	82,535	0	0	0	0	100,736
50 to 54	1	1	1	5	0	3	0	0	0	11
Avg. Pay	104,797	67,529	112,649	107,941	0	112,582	0	0	0	105,675
55 to 59	0	3	1	0	2	2	1	0	0	9
Avg. Pay	0	106,947	82,233	0	108,520	97,582	112,549	0	0	103,092
60 to 64	0	1	0	3	4	1	1	0	0	10
Avg. Pay	0	112,549	0	102,611	101,268	112,649	112,649	0	0	105,075
65 to 69	0	1	3	3	0	4	1	0	1	13
Avg. Pay	0	112,549	92,606	112,249	0	112,136	112,649	0	97,642	106,611
70 & Up	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0
Total	1	9	6	14	8	10	3	0	1	52
Avg. Pay	104,797	102,344	96,666	107,466	101,181	109,410	112,615	0	97,642	104,797

Average Age: 57.9  
Average Service: 14.4



(Continued)

**The Number and Average Annual Compensation of Active Employees  
By Age and Service as of December 31, 2013**

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	4	2	1	0	0	0	0	0	0	7
Avg. Pay	19,470	22,607	4,598	0	0	0	0	0	0	18,242
25 to 29	3	4	8	1	0	0	0	0	0	16
Avg. Pay	28,651	36,077	33,640	36,313	0	0	0	0	0	33,481
30 to 34	2	11	8	3	0	0	0	0	0	24
Avg. Pay	22,388	25,267	29,276	39,118	0	0	0	0	0	28,095
35 to 39	3	5	7	4	2	0	0	0	0	21
Avg. Pay	15,954	33,014	46,750	40,034	44,503	0	0	0	0	37,587
40 to 44	1	9	7	6	3	0	0	0	0	26
Avg. Pay	33,849	32,926	38,115	50,338	47,154	0	0	0	0	40,018
45 to 49	3	8	7	6	4	2	1	0	0	31
Avg. Pay	31,297	33,824	29,792	38,835	48,850	50,782	58,564	0	0	37,470
50 to 54	6	4	18	14	3	5	5	1	0	56
Avg. Pay	26,011	28,045	36,440	39,279	54,210	55,899	60,301	47,161	0	40,444
55 to 59	3	6	19	11	7	5	2	0	0	53
Avg. Pay	54,341	33,122	39,234	34,424	50,010	56,601	59,923	0	0	42,241
60 to 64	0	3	5	7	7	6	2	1	2	33
Avg. Pay	0	28,298	19,797	32,930	47,074	40,834	58,833	66,503	66,690	39,590
65 to 69	0	1	6	3	6	3	1	1	1	22
Avg. Pay	0	30,204	39,392	25,020	46,234	41,734	58,504	68,705	76,758	43,100
70 & Up	0	0	3	0	1	0	0	1	0	5
Avg. Pay	0	0	15,774	0	51,142	0	0	53,865	0	30,466
Total	25	53	89	55	33	21	11	4	3	294
Avg. Pay	28,132	30,669	34,770	37,872	48,383	49,251	59,644	59,058	70,046	38,230

Average Age: 49.8  
Average Service: 10.4



**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	4	\$ 11,958	\$ 2,990
50 - 54	9	45,989	5,110
55 - 59	15	97,420	6,495
60 - 64	31	427,242	13,782
65 - 69	52	831,650	15,993
70 - 74	71	1,253,560	17,656
75 - 79	45	599,734	13,327
80 - 84	41	560,624	13,674
85 - 89	33	388,348	11,768
90 - 94	20	265,350	13,267
95 & Over	6	40,101	6,684
Total	327	\$ 4,521,976	\$ 13,829

**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	3	\$ 18,000	\$ 6,000
50 - 54	1	633	633
55 - 59	1	9,314	9,314
60 - 64	2	25,828	12,914
65 - 69	2	18,292	9,146
70 - 74	1	1,706	1,706
75 - 79	4	32,672	8,168
80 - 84	12	100,417	8,368
85 - 89	5	15,180	3,036
90 - 94	3	33,114	11,038
95 & Over	3	28,579	9,526
Total	37	\$ 283,735	\$ 7,669



**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	6	\$ 50,020	\$ 8,337
50 - 54	2	25,339	12,670
55 - 59	4	36,868	9,217
60 - 64	3	46,273	15,424
65 - 69	0	0	0
70 - 74	2	23,760	11,880
75 - 79	4	49,800	12,450
80 - 84	0	0	0
85 - 89	0	0	0
90 - 94	0	0	0
95 & Over	0	0	0
Total	21	\$ 232,060	\$ 11,050



## SCHEDULE H

### ANALYSIS OF FINANCIAL EXPERIENCE

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

Type of Activity	\$ Gain (or Loss) For Two Year Period Ending 12/31/2013	\$ Gain (or Loss) For Two Year Period Ending 12/31/2011
<b>Age &amp; Service Retirements.</b> If members retire at older ages, there is a gain. If younger ages, a loss.	\$ 479.2	\$ (4,194.1)
<b>Disability Retirements.</b> If disability claims are less than assumed, there is a gain. If more claims, a loss.	11.2	0.6
<b>Death-in Service Benefits.</b> If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	42.0	33.9
<b>Withdrawal From Employment.</b> If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	273.6	228.4
<b>Pay Increases.</b> If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	505.3	1,035.2
<b>New Members.</b> Additional unfunded accrued liability will produce a loss.	(703.9)	(587.4)
<b>Investment Income.</b> If there is a greater investment income than assumed, there is a gain. If less income, a loss.	(4,312.7)	(9,178.7)
<b>Death After Retirement.</b> If retirants live longer than assumed, there is a loss. If not as long, a gain.	(767.1)	(34.3)
<b>Other.</b> Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	494.6	(1,012.2)
<b>Gain (or Loss) During Year From Financial Experience</b>	<u>\$ (3,977.8)</u>	<u>\$ (13,708.6)</u>
<b>Non-Recurring Items.</b> Adjustments for plan amendments, assumption changes, or method changes.	(3,211.5)	0.0
<b>Composite Gain (or Loss) During Year</b>	<u>\$ (7,189.3)</u>	<u>\$ (13,708.6)</u>