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June 19, 2018

Mr. John Herrington, Director
State of Connecticut
Office of the State Comptroller
Retirement Services Division
55 Elm Street
Hartford, CT 06106

Dear John:

Enclosed is the "Connecticut Probate Judges and Employees Retirement System Report of the Actuary on the Valuation Prepared as of December 31, 2017".

The valuation indicates that employer contributions at the rate of 22.00% of compensation are sufficient to support the benefits of the System. Please note that the Commission has adopted a revised funding policy, whereby, the actuarially determined employer contribution rate cannot be less than the employer normal cost rate.

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

Sincerely yours,

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

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

JJG/EJK

Enc.

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**CONNECTICUT PROBATE JUDGES
AND EMPLOYEES RETIREMENT SYSTEM**

**REPORT OF THE ACTUARY ON THE VALUATION
PREPARED AS OF DECEMBER 31, 2017**





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June 19, 2018

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, 2017. The report indicates that actuarially determined employer contributions at the rate of 22.00% of compensation for the fiscal year ending June 30, 2019 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. Beginning with the fiscal year ending June 30, 2018, the Commission has adopted a revised funding policy, whereby, the actuarially determined employer contribution rate cannot be less than the employer normal cost rate.

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 funding objective of the plan is that contribution rates over time will remain level as a percent of payroll. The valuation method has been changed from the projected unit credit method to the entry age normal method. Gains and losses are reflected in the unfunded accrued liability which is being amortized as a level dollar amount within a 19-year period as of December 31, 2017.

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.



Members of the Commission
June 19, 2018
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, appearing to read 'John J. Garrett'.

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

A handwritten signature in blue ink, appearing to read 'Edward J. Koebel'.

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



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**CONNECTICUT PROBATE JUDGES AND EMPLOYEES RETIREMENT SYSTEM
REPORT OF THE ACTUARY
ON THE VALUATION
PREPARED AS OF DECEMBER 31, 2017**

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, 2017	December 31, 2015
Discount Rate	6.90%	8.00%
Number of active members	365	371
Annual compensation	\$ 19,907,883	\$ 19,041,511
Retired members and beneficiaries:		
Number	372	336
Annual allowances	\$ 5,507,957	\$ 4,739,254
Deferred Vested Members:		
Number	19	28
Annual allowances	\$ 226,974	\$ 334,008
Assets:		
Market Value	\$ 100,057,822	\$ 85,294,815
Actuarial Value	99,353,417	92,001,796
Unfunded actuarial accrued liability	\$ 17,748,228	\$ (6,149,851)
Amortization period (years)	19	13
Funded Ratio	84.8%	107.2%
For Fiscal Year Ending	June 30, 2019	June 30, 2017
Actuarially Determined Employer Contribution (ADEC):		
Normal cost	\$ 2,784,137	\$ 2,188,457
Accrued liability	<u>1,594,330</u>	<u>(720,454)</u>
Total	\$ 4,378,467	\$ 1,468,003
Actuarially Determined Employer Contribution Rates:		
Normal cost	13.99%	11.50%
Accrued liability	<u>8.01</u>	<u>(3.78)</u>
Total	22.00%	7.72%

2. The results of the valuation are given in Schedule A.



3. Comments on the valuation results are given in Section IV, the rates of contribution payable by employers are given in Section V, and comments on the experience and actuarial gains and losses during the valuation year are given in Section VII.
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. As was changed in the roll forward valuation as of December 31, 2016, revised economic assumptions and a new cost method were adopted by the State Employees' Retirement Commission in accordance with the Memorandum of Agreement (MOU) between the State and SEBAC effective December 8, 2016. The main economic assumption change decreased the long-term investment return assumption from 8.00% to 6.90%. In addition, the asset valuation method was changed as of December 31, 2017 to a 20% write up method, which recognizes 20% of any difference between actual and expected investment income (gain/loss) in the valuation year and 20% of any previous years' unrecognized investment gains/losses.
6. Schedule F gives a summary of the benefit and contribution provisions of the plan. There were no changes since the previous valuation.
7. 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
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)
2015	371	19,042	51,325	6.4	336	1.0	4,739	24.9	85,852	92,002	(6,150)
2017	365	19,908	54,542	6.2	372	1.0	5,508	27.7	117,101	99,353	17,748

*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, 2017 and December 31, 2015 upon which the valuation was based. Detailed tabulations of the data are given in Schedule G.

Active Members as of December 31, 2017

Group	Number	Payroll	Salary	Group Averages	
				Age	Service
Judges	54	\$ 6,258,450	\$ 115,897	58.6	13.6
Employees	311	13,649,433	43,889	50.0	10.9
Total	365	\$ 19,907,883	\$ 54,542	51.3	11.3

Of the 365 active members, 179 are vested and 186 are non-vested.

Active Members as of December 31, 2015

Group	Number	Payroll	Salary	Group Averages	
				Age	Service
Judges	54	\$ 5,908,227	\$ 109,412	57.7	12.3
Employees	317	13,133,284	41,430	49.8	10.5
Total	371	\$ 19,041,511	\$ 51,325	50.9	10.8

Of the 371 active members, 161 are vested and 210 are non-vested.



Retired Lives as of December 31, 2017

Type of Benefit Payment	No.	Annual Benefits	Group Averages	
			Benefit	Age
Retirement	322	\$ 4,992,279	\$ 15,504	74.8
Survivor	50	515,678	10,314	80.5
Total	372	\$ 5,507,957	\$ 14,806	75.5

This valuation also includes 19 deferred vested members with estimated annual benefits of \$226,974 and 113 non-vested inactive members with employee contribution account balances totaling \$184,826.

Retired Lives as of December 31, 2015

Type of Benefit Payment	No.	Annual Benefits	Group Averages	
			Benefit	Age
Retirement	301	\$ 4,453,047	\$ 14,794	74.7
Survivor	35	286,207	8,177	79.0
Total	336	\$ 4,739,254	\$ 14,105	75.1

This valuation also includes 28 deferred vested members with estimated annual benefits of \$334,008 and 121 non-vested inactive members with employee contribution account balances totaling \$241,710.

SECTION III - ASSETS

1. As of December 31, 2017, the total market value of assets amounted to \$100,057,822 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 \$99,353,417. Schedule B shows the development of the actuarial value of assets as of December 31, 2017.
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, 2017. 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 \$117,101,645, of which \$60,613,251 is for the benefits payable on account of present retired members, beneficiaries of deceased members, and members entitled to deferred vested benefits, and \$56,488,394 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 \$99,353,417 as of December 31, 2017. When this amount is deducted from the actuarial accrued liability of \$117,101,645, there remains \$17,748,228 as the unfunded actuarial 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 due to the amortization of the unfunded accrued liability. The valuation indicates that annual employer normal contributions at the rate of 13.99% of active members' compensation are required to provide the currently accruing benefits of the System.

4. Accrued liability contributions of 8.01% of payroll are to be made toward amortizing the unfunded accrued liability. Annual accrued liability contribution at the rate of 8.01% of payroll will amortize the unfunded accrued liability within 19 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 2018/2019 fiscal year.

	2018 / 2019	
Contribution for	Contribution Amount	Contribution Rate
Normal Cost		
Service retirement benefits	\$2,920,592	14.67%
Disability benefits	149,865	0.75%
Survivor benefits	<u>6,326</u>	<u>0.04%</u>
Total	\$3,076,783	15.46%
Less Member Contributions	292,646	1.47%
Employer Normal Cost	\$2,784,137	13.99%
Unfunded Actuarial Accrued Liabilities (19 year level dollar amortization)	\$1,594,330	8.01%
Total	\$4,378,467	22.00%



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 a 6.90% investment return on actuarial value of assets for the two years following the valuation date, and 3.50% annual growth in the compensation of active members.

Contribution for*	2019/2020		2020/2021	
	As % of Pay	\$	As % of Pay	\$
Employer Normal Cost	13.99%	\$2,881,582	13.99%	\$2,982,437
Unfunded Actuarial Accrued Liabilities	8.07%	\$1,662,002	7.89%	\$1,682,019
Total (not less than Normal Cost)	22.06%	\$4,543,664	21.88%	\$4,664,456

* Beginning with the contribution requirement for the fiscal year ending June 30, 2018, the Commission has adopted a revised funding policy, whereby, the actuarially determined employer contribution rate cannot be less than the employer normal cost rate.

As can be seen in the table above, the employer contributions expressed as a percentage of payroll are expected to remain relatively level 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 Statement Nos. 67 and 68 replaced Statements Nos. 25 and 27 for plan years beginning after June 15, 2013. The information required under the new GASB Statements will be issued in separate reports. The information in this section is provided for informational purposes only. 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, 2017 AND DECEMBER 31, 2015**

GROUP	2017	2015
Retirees and beneficiaries currently receiving benefits	372	336
Terminated employees entitled to benefits but not yet receiving benefits	132	149
Active plan members	<u>365</u>	<u>371</u>
Total	869	856

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) - Projected Unit Credit (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
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)
12/31/2015	92,002	85,852	(6,150)	107.2	19,042	(32.3)
12/31/2017	99,353	117,101	17,748	84.8	19,908	89.2%



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>Actuarially Determined Contribution</u>	<u>Percentage Contributed</u>
2015	2013	\$1,370,866	100%
2016	2013	\$1,457,186	100%
2017	2015	\$1,468,003	100%
2018	2016	\$4,426,482	
2019	2017	\$4,378,467	
2020	2017	\$4,543,664	

4. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at December 31, 2017. Additional information as of the latest actuarial valuation follows.

Valuation date	12/31/2017
Actuarial cost method	Entry Age Normal
Amortization method	Level dollar, closed
Remaining amortization period	19 years
Asset valuation method	Smoothed market with 20% recognition of investment gains and losses
Actuarial assumptions:	
Investment rate of return*	6.90%
Projected salary increases*	3.50%
Cost-of-living adjustments	2.25%
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, 2017 is shown below.

	<u>\$ Thousands</u>
(1) UAAL* as of December 31, 2015	\$ (6,149.8)
(2) Total normal cost from last valuation	2,469.1
(3) Total actual contributions for 2016	1,708.6
(4) Interest accrual: $(1) \times .08 + [(2) - (3)] \times .0392$	(462.2)
(5) Change in actuarial assumptions as of December 31, 2016	<u>22,388.8</u>
(6) Expected UAAL as of December 31, 2016: $(1) + (2) - (3) + (4) + (5)$	\$ 16,537.3
(7) Total normal cost from last valuation	2,975.5
(8) Total actual contributions for 2017	3,092.5
(9) Interest accrual: $(6) \times .069 + [(7) - (8)] \times .0339$	<u>1,137.1</u>
(10) Expected UAAL as of December 31, 2017: $(6) + (7) - (8) + (9)$	\$ 17,557.4
(11) Change due to plan amendments	0.0
(12) Change due to actuarial assumptions or methods	<u>(295.2)</u>
(13) Expected UAAL as of December 31, 2017 after changes: $(10) + (11) + (12)$	\$ 17,262.2
(14) Actual UAAL as of December 31, 2017	\$ 17,748.2
(15) Gain/(loss): $(13) - (14)$	\$ (486.0)
(16) Gain/(loss) as percent of actuarial accrued liabilities at start of year (\$85,851.9)	(0.6)%

*Unfunded actuarial accrued liability.

Valuation Date December 31	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2011	(22.4)%
2013	5.4
2015	1.7
2017	(0.6)%



SCHEDULE A

RESULTS OF VALUATION

PREPARED AS OF DECEMBER 31, 2017 AND DECEMBER 31, 2015

	DECEMBER 31, 2017	DECEMBER 31, 2015
1. ACTUARIAL ACCRUED LIABILITY		
Present value of prospective benefits payable in respect of:		
(a) Present active members		
- Service retirement benefits	\$54,724,789	\$35,644,750
- Disability retirement benefits	1,666,223	1,438,316
- Death and survivor benefits	<u>97,382</u>	<u>229,934</u>
- Total	\$56,488,394	\$37,313,001
(b) Present inactive members and members entitled to deferred vested benefits:	\$2,203,962	\$3,321,605
(c) Present annuitants and beneficiaries	<u>\$58,409,289</u>	<u>\$45,217,339</u>
(d) Total actuarial accrued liability [1(a) + 1(b) + 1(c)]	\$117,101,645	\$85,851,945
2. ACTUARIAL VALUE OF ASSETS	<u>\$99,353,417</u>	<u>\$92,001,796</u>
3. UNFUNDED ACTUARIAL ACCRUED LIABILITY [1(d) – 2]	\$17,748,228	\$(6,149,851)



SCHEDULE B

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

For the Year Ending December 31	2017
(1) Actuarial Value Beginning of Year*	\$94,888,378
(2) Market Value End of Year**	\$100,057,822
(3) Market Value Beginning of Year	\$89,326,667
(4) Cash Flow	
(a) Contributions**	\$3,096,913
(b) Disbursements	<u>(5,275,523)</u>
(c) Net: (4)(a) + (4)(b)	\$(2,178,610)
(5) Investment Income	
(a) Market Total: (2) – (3) – (4)(c)	\$12,909,765
(b) Assumed Rate	6.90%
(c) Amount for Immediate Recognition: [(1) x (5)(b)] + [(4)(c) less Receivable**] x (5)(b) x 0.5	\$6,471,983
(6) Expected Actuarial Value End of Year: (1) + (4)(c) less Receivable** + (5)(c)	\$99,177,316
(7) Phased-In Recognition of Investment Income	
(a) Difference between Market & Expected Actuarial Value: (2) – (6)	\$880,506
(b) 20% of Difference: 0.2 x (7)(a)	\$176,101
(8) Preliminary Actuarial Value End of Year: (6) + (7)(b)	\$99,353,417
(9) Final Actuarial Value End of Year Using 20% Corridor: Greater of [(8) and .8 x (2)], but no more than 1.2 x (2)	\$99,353,417
(10) Difference Between Market & Actuarial Value: (2) – (9)	\$704,405
(11) Rate of Return on Actuarial Value	7.08%

* Before corridor constraints, if applicable and adjusted.

** Includes additional receivables of \$4,435 in 2017



SCHEDULE C

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

	YEAR ENDING	
	December 31, 2017 (\$1,000's)	December 31, 2016 (\$1,000's)
<u>Receipts for the Year</u>		
Contributions:		
Members	\$ 245	\$ 246
Employer	<u>2,847</u>	<u>1,463</u>
Subtotal	\$ 3,092	\$ 1,709
Investment Earnings	12,910	7,415
Health Services Allowance	0	0
Other	<u>4</u>	<u>4</u>
TOTAL	\$ 16,006	\$ 9,128
<u>Disbursements for the Year</u>		
Benefit Payments	\$ 5,251	\$ 5,083
Refunds to Members	24	13
Health Services Cost	0	0
Other	<u>0</u>	<u>0</u>
TOTAL	\$ 5,275	\$ 5,096
<u>Excess of Receipts over Disbursements</u>	\$ 10,731	\$ 4,032
<u>Reconciliation of Asset Balances</u>		
Asset Balance as of the Beginning of Year	\$ 89,327	\$ 85,295
Excess of Receipts over Disbursements	<u>10,371</u>	<u>4,032</u>
Asset Balance as of the End of Year	<u>\$ 100,058</u>	<u>\$ 89,327</u>
Rate of Return	14.63%	8.87%



SCHEDULE D

OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS

Adopted or reaffirmed by the Commission for the December 31, 2016 and later valuations.

VALUATION INTEREST RATE: 6.90% per annum, compounded annually, net of expenses.

SALARY INCREASES: 3.50% per annum.

COST OF LIVING ADJUSTMENTS: 2.25% 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		
	Men			
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
	Women			
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 20% of any difference between actual and expected investment income (gain/loss) in the valuation year and 20% of any previous years' unrecognized investment gains/losses. In addition, the actuarial value of assets cannot be less than 80% or more than 120% of the market value of assets.

VALUATION METHOD: Entry Age Normal 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 the projected benefit basis, which is used to determine the present value of each member's expected benefit payable at retirement, disability or death. The calculations are based on the member's age, years of service, sex, compensation, expected future salary increases, and an assumed future interest earnings rate (currently 6.90%). The calculations consider the probability of a member's death or termination of employment prior to becoming eligible for a benefit and the probability of the member terminating with a service, disability, or survivor's benefit. The present value of the expected benefits payable to active members is added to the present value of the expected future payments to current benefit recipients to obtain the present value of all expected benefits payable to the present group of members and survivors.

The employer contributions required to support the benefits of PJERS are determined following a level funding approach, and consist of a normal contribution and an accrued liability contribution.

The normal contribution is determined using the "entry age normal" method. Under this method, a calculation is made for pension benefits to determine the uniform and constant percentage rate of employer contribution which, if applied to the compensation of the average new member during the entire period of his anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his behalf.

The unfunded accrued liability is determined by subtracting the current assets and the present value of prospective employer normal contributions and member contributions from the present value of expected benefits to be paid from the PJERS. The accrued liability contribution amortizes the balance of the unfunded accrued liability over a period of years from the valuation date.



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 commencing service before January 1, 2011 (provided one full term is served by age 70).

For Judges commencing service on or after January 1, 2011, the hourly requirement is 1,000 hours per year.

Employees For Employees hired before January 1, 2011, the hourly requirement is 430 hours per year.

For Employees hired on or after January 1, 2011, the hourly requirement is 1,000 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 (no additional pension credit after age 70).

Benefit *Judges and Employees not covered by Social Security* – 2% of Final Average Compensation 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. The minimum employer contribution is the employer normal cost.



SCHEDULE G

TABLE 1

**The Number and Average Annual Compensation of Active Employees
By Age and Service as of December 31, 2017**

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	3	3	0	0	0	0	0	0	0	6
Avg. Pay	17,115	17,331	0	0	0	0	0	0	0	17,223
25 to 29	2	11	4	1	0	0	0	0	0	18
Avg. Pay	22,344	34,031	19,336	36,115	0	0	0	0	0	29,583
30 to 34	4	13	8	3	0	0	0	0	0	28
Avg. Pay	25,432	35,994	37,295	47,275	0	0	0	0	0	36,066
35 to 39	1	6	8	9	1	0	0	0	0	25
Avg. Pay	18,645	35,871	43,284	42,356	47,299	0	0	0	0	40,346
40 to 44	0	7	4	5	3	1	0	0	0	20
Avg. Pay	0	35,152	35,865	44,751	45,178	63,050	0	0	0	40,593
45 to 49	1	8	11	6	7	3	1	0	0	37
Avg. Pay	19,415	37,952	46,520	50,694	62,855	67,293	56,754	0	0	49,663
50 to 54	2	13	12	9	7	3	0	2	0	48
Avg. Pay	22,323	50,018	38,872	38,312	56,844	63,365	0	73,103	0	46,674
55 to 59	1	12	7	17	9	1	5	4	1	57
Avg. Pay	27,586	30,087	41,760	47,026	50,323	67,762	67,167	72,713	51,791	47,010
60 to 64	2	9	8	12	4	7	7	0	1	50
Avg. Pay	16,551	33,141	45,398	47,274	46,338	61,873	68,971	0	77,443	48,811
65 to 69	0	0	2	5	2	4	2	0	1	16
Avg. Pay	0	0	32,265	39,969	48,011	42,384	64,736	0	84,104	46,469
70 & Up	0	0	1	1	2	1	1	0	0	6
Avg. Pay	0	0	28,845	35,926	25,508	72,129	53,839	0	0	40,293
Total	16	82	65	68	35	20	16	6	3	311
Avg. Pay	21,322	36,204	39,885	44,623	51,601	59,878	66,168	72,843	71,113	43,889

Average Age: 50.0
Average Service: 10.9



SCHEDULE G
(Continued)

TABLE 2

**The Number and Average Annual Compensation of Active Judges
By Age and Service as of December 31, 2017**

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	112,843	0	0	0	0	0	0	0	112,843
40 to 44	0	0	1	0	0	0	0	0	0	1
Avg. Pay	0	0	116,998	0	0	0	0	0	0	116,998
45 to 49	0	2	1	1	0	0	0	0	0	4
Avg. Pay	0	106,290	77,169	101,397	0	0	0	0	0	97,787
50 to 54	0	2	1	2	4	1	0	0	0	10
Avg. Pay	0	118,868	116,998	106,372	130,204	95,483	0	0	0	118,378
55 to 59	0	4	2	3	1	0	3	0	0	13
Avg. Pay	0	99,486	88,388	120,115	130,204	0	125,869	0	0	110,990
60 to 64	0	4	3	1	1	3	2	1	0	15
Avg. Pay	0	102,780	133,607	110,517	130,304	112,544	106,315	130,304	0	115,555
65 to 69	0	1	1	2	1	2	2	1	0	10
Avg. Pay	0	112,843	116,998	103,367	85,798	123,601	130,304	130,304	0	116,135
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	0	14	9	9	7	6	7	2	0	54
Avg. Pay	0	106,076	112,276	110,193	123,875	113,386	121,549	130,304	0	115,897

Average Age: 58.6
Average Service: 13.6



SCHEDULE G
(Continued)

TABLE 3

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

Age	Number	Total Annual Benefits	Average Annual Benefits
Under 50	5	\$ 60,691	\$ 12,138
50 - 54	6	38,200	6,367
55 - 59	9	48,922	5,436
60 - 64	26	311,276	11,972
65 - 69	50	793,542	15,871
70 - 74	70	1,589,409	22,706
75 - 79	61	970,958	15,917
80 - 84	41	541,601	13,210
85 - 89	31	413,722	13,346
90 - 94	17	147,924	8,701
95 & Over	6	76,034	12,672
Total	322	\$ 4,992,279	\$ 15,504

TABLE 4

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

Age	Number	Total Annual Benefits	Average Annual Benefits
Under 50	3	\$ 29,505	\$ 9,835
50 - 54	1	646	646
55 - 59	1	646	646
60 - 64	2	11,073	5,537
65 - 69	3	32,076	10,692
70 - 74	3	46,205	15,402
75 - 79	4	68,801	17,200
80 - 84	6	64,544	10,757
85 - 89	14	124,201	8,872
90 - 94	10	98,935	9,894
95 & Over	3	39,046	13,015
Total	50	\$ 515,678	\$ 10,314



SCHEDULE G
(Continued)

TABLE 5

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

Age	Number	Total Annual Benefits	Average Annual Benefits
Under 50	4	\$ 47,321	\$ 11,830
50 - 54	5	56,142	11,228
55 - 59	5	79,439	15,888
60 - 64	3	16,592	5,531
65 - 69	0	0	0
70 - 74	0	0	0
75 - 79	1	5,100	5,100
80 - 84	1	22,380	22,380
85 - 89	0	0	0
90 - 94	0	0	0
95 & Over	0	0	0
Total	19	\$ 226,974	\$ 11,946