Actuarial Section

TCRS
TENNESSEE CONSOLIDATED RETIREMENT SYSTEM
A Program of the Tennessee Treasury Department

Actuarial Valuations

Biennial actuarial valuations of the TCRS are performed by an independent actuarial consulting firm to assess the funding status of the system and to determine employer contribution rates for its various components. The valuation performed as of July 1, 2013 set employer rates effective July 1, 2014 through June 30, 2016. The Board of Trustees of the system is responsible for adopting the employer contribution rates after reviewing the actuarial results.

Recent GASB Standards separated pension accounting from pension funding. As a result, TCRS will begin annual actuarial valuations beginning June 30, 2015 for both GASB 67/68 purposes and funding purposes.

Funding of Pensions

It is the policy of the state to fund pensions by actuarially-determined contributions which are intended to provide funding for both the normal liability cost and the unfunded actuarial accrued liability cost. This policy seeks to ensure that sufficient assets will be available to pay the benefits as promised by the pension plan.

Accrued Liability

The unfunded accrued liability within the plan was most recently reestablished with the 2013 actuarial valuation for most groups. This was accomplished by setting the unfunded accrued liability equal to the excess of the Entry Age Normal Past Service Liability over the valuation assets for each group.

Specifics

Valuations are based on demographic data (employees' ages, salaries and service credits), economic projections (salary increases, interest rates and investment earnings) and decrement estimates (mortality and disability rates).

The economic projections and decrement estimates used for valuation purposes utilized the assumptions recommended by the actuary and adopted by the Board of Trustees based on an actuarial experience study conducted every four years. The earnings rate assumption adopted by the Board is subject to the approval of the Council on Pensions and Insurance.

Quadrennial Experience Study

A quadrennial experience study was conducted as of June 30, 2012. The system noted improvements in mortality and included an adjustment for projected mortality. In addition, the system lowered the salary scale for all groups. Assumptions developed from the June 30, 2012 experience study were used in the July 1, 2013 actuarial valuation. The next experience study will occur as of June 30, 2016.

Funding Policy

The TCRS Board of Trustees adopted a funding policy for TCRS on September 26, 2014. The policy outlines the procurement of actuarial services, the assumptions to be used in the experience study, the components of the actuarial valuation, and performance of an actuarial audit. The funding policy can be found on the TCRS website at http://treasury.tn.gov/tcrs/PDFs/FundingPolicy.pdf.

BPS&M
Bryan, Pendleton, Swats & McAllister, LLC
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December 16, 2015

Mr. David H. Lillard, Jr.
Chairman, Board of Trustees
Tennessee Consolidated Retirement System
502 Deaderick Street
Nashville, Tennessee 37243-0201

Re: Actuary's Certification Letter

Dear Mr. Lillard:

The purpose of this letter is to certify the actuarial adequacy of contributions being made by the State of Tennessee, Local Education Agencies and participating Political Subdivisions to the Tennessee Consolidated Retirement System and to discuss the approach currently being taken toward meeting the financing objectives of the Plan.

The most recent actuarial valuation for funding purposes completed as of the year ending June 30, 2015 for the Tennessee Consolidated Retirement System was performed as of July 1, 2013. In addition, a valuation for accounting purposes pursuant to GASB 67 and 68 was performed as of June 30, 2014 and was used to satisfy June 30, 2015 reporting date requirements. These valuations were based on a set of actuarial assumptions (described in detail in the section headed "Summary of Actuarial Assumptions and Methods") which was adopted by the Board of Trustees on the recommendation of the actuary after a study of actual experience under the TCRS during the four-year period ending June 30, 2012. Beginning June 30, 2015, actuarial valuations will be performed annually for both funding and accounting purposes.

There have been no significant changes in the level of benefits provided by the plan since the date of the preceding valuation.

In performing the 2013 and 2014 valuations, we relied on employee data and asset information provided by the administrative staff of the Tennessee Consolidated Retirement System. In the case of employee data, each individual record was audited for reasonableness and internal consistency, although the validity of the information was not traced to source documents. With respect to plan assets, a general review for consistency with the information furnished for prior valuations was performed.

Certain tables presented in the Comprehensive Annual Financial Report are derived from the 2013 and 2014 actuarial valuation reports prepared by Bryan, Pendleton, Swats and McAllister, LLC. The tables were prepared by the staff of the Tennessee Consolidated Retirement System and examined by our firm. These tables include the following –

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Mr. David H. Lillard, Jr.
Chairman, Board of Trustees
December 16, 2015
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Actuarial Section

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- Summary of Accrued and Unfunded Accrued Liabilities
- Selected Actuarial Funding Information
- Analysis of Financial Experience

The Schedule of Retired Member Activity in the Actuarial Data section was prepared by our firm using information gathered from prior actuarial valuations.

The 2013 and 2014 valuations were prepared in accordance with accepted actuarial principles of practice prescribed by the Actuarial Standards Board and the principles of Governmental Accounting Standards Board Statements 25, 27, 67 and 68 as applicable to each year. I am a Member of the American Academy of Actuaries with experience in performing valuations for public retirement systems; all calculations were performed either by me or by other qualified actuaries under my direct supervision.

Based upon the valuation results and the contribution rates adopted by the Board of Trustees, it is our opinion that the Tennessee Consolidated Retirement System continues to fund its liabilities in accordance with standard actuarial principles of advance funding, continuing a program first adopted in 1975.

Sincerely,

Justin C. Thacker, F.S.A.

The following assumptions were adopted by the Board of Trustees for use with the July 1, 2013 valuation based on the consulting actuary's recommendations resulting from the June 30, 2012 actuarial experience study.

General Actuarial Methods

* *Actuarial Cost Method* (Frozen Entry Age) — The state and teacher unfunded accrued liabilities are being funded over a thirteen-year and eight-year period, respectively. The amortization period related to local government unfunded accrued liabilities varies by entity.

* *Treatment of Actuarial Gains and Losses* — Under the Frozen Entry Age Method, any actuarial gains or losses are absorbed into the normal cost, unless the unfunded liability is reestablished.

* *Asset Valuation Method* — Assets are valued on a basis which reflects a ten-year moving average of the fair market value. The actuarial value of assets must be within 80-120 percent of the market value of assets.

* *Valuation Data* — The administrative staff of TCRS furnishes the actuary with demographic data relating to the active life members and the retired life members. The fair value of system assets are also provided by retirement system staff. All data is reviewed for reasonableness and consistency from year to year, but is not audited by the actuary.

* *Post-Retirement Adjustments* — Retirement benefits are assumed to increase at the geometric rate of 2.5 percent annually, reflecting the 1997 adoption of compounded cost-of-living adjustments.

Economic Assumptions

* *Investment Return Rate* — 7.5 percent per annum, compounded annually.

* *Employee Salary Increases* — Graded scale that reflects the plan experience pattern of declining escalation rates as participant ages increase. No explicit assumption is made regarding the portion attributable to the effects of inflation on salaries. Active membership is assumed to remain constant.

* *Increase in Social Security Wage Base* — 3.5 percent anual increase.

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Decrement Assumptions

* *Post-Retirement Mortality* — Specifically adopted tables have been created to accurately reflect patterns that occur among TCRS retirees. Sample rates are below.

Male		
Age	Teachers	State and Political Subdivisions
Age 50	0.2%	0.3%
Age 60	0.4%	0.9%
Age 70	1.4%	2.0%
Female		
Age	Teachers	State and Political Subdivisions
Age 50	0.1%	0.2%
Age 60	0.4%	0.7%
Age 70	0.9%	1.2%

* *Pre-Retirement Mortality* — All groups are based on the 2012 Static Non-annuitant mortality table published by the IRS.

* *Withdrawal Due to Disability* — Sample rates of disability based on experience:

Male			
Age	Teachers	State	Political Subdivisions
Age 30	0.01%	0.07%	0.03%
Age 40	0.08%	0.16%	0.08%
Age 50	0.17%	0.27%	0.38%
Female			
Age	Teachers	State	Political Subdivisions
Age 30	0.01%	0.04%	0.03%
Age 40	0.08%	0.14%	0.08%
Age 50	0.17%	0.33%	0.38%

* *Turnover Assumption* — Tables for probabilities of separation due to termination of employment are developed utilizing a "two-year select and ultimate" approach.

Teachers			
	1st Year Employment	2nd Year Employment	Ultimate
Male			
Age 30	18.0%	13.5%	6.0%
Age 40	18.0%	13.5%	2.0%
Age 50	19.7%	14.2%	2.0%
Female			
Age 30	18.0%	13.5%	7.6%
Age 40	18.0%	13.5%	2.3%
Age 50	19.7%	14.2%	1.6%

State			
	1st Year Employment	2nd Year Employment	Ultimate
Male			
Age 30	23.0%	18.6%	9.6%
Age 40	18.6%	13.8%	2.6%
Age 50	14.8%	11.1%	2.2%
Female			
Age 30	23.0%	18.6%	10.3%
Age 40	18.6%	13.8%	3.4%
Age 50	14.8%	11.1%	2.3%

Political Subdivisions			
	1st Year Employment	2nd Year Employment	Ultimate
Male			
Age 30	21.8%	17.9%	7.4%
Age 40	19.2%	15.9%	3.5%
Age 50	17.0%	13.0%	2.8%
Female			
Age 30	21.8%	17.9%	11.1%
Age 40	19.2%	15.9%	5.4%
Age 50	17.0%	13.0%	3.8%

(continued)

* *Retirement* — The probabilities of retirement for members eligible to retire:

Male			
Age	Teachers	State	Political Subdivisions
Age 60	15.0%	8.5%	10.5%
Age 61	16.0%	11.0%	15.0%
Age 62	22.0%	16.0%	20.0%
Age 63	16.0%	12.0%	17.5%
Age 64	18.0%	14.0%	17.5%
Age 65	35.0%	22.0%	24.0%
Age 70	16.0%	15.5%	18.0%
Age 75	100.0%	100.0%	100.0%

Female			
Age	Teachers	State	Political Subdivisions
Age 60	17.0%	9.0%	11.0%
Age 61	20.0%	12.0%	13.0%
Age 62	26.0%	18.0%	18.0%
Age 63	19.5%	12.0%	16.0%
Age 64	24.0%	14.0%	16.0%
Age 65	37.5%	22.0%	22.0%
Age 70	34.0%	17.0%	19.0%
Age 75	100.0%	100.0%	100.0%

In addition, for members younger than age 60, a loading factor of 12.5 percent for teachers and 7.5 percent for state and political subdivision employees is added during the year the member is first eligible for unreduced retirement. After age 60, for those members with 15 or more years of service, an 8.0 percent load is added for teachers and 2.0 percent for state employees and political subdivision employees.

SCHEDULE OF ACTIVE MEMBER VALUATION DATA

Actuarial Valuation July 1		Number	Annual Payroll In Thousands	Average Annual Pay	Average Annual Percentage Increase In Average Pay
2005	SETHEEPP	132,026	$ 5,245,988	$39,735	3.49%
	PSPP	74,124	1,890,968	25,511	2.96%
2007	SETHEEPP	136,337	5,742,858	42,123	2.96%
	PSPP	76,388	2,081,965	27,255	3.36%
2009	SETHEEPP	136,158	6,054,528	44,467	2.74%
	PSPP	78,792	2,282,081	28,963	3.09%
2011	SETHEEPP	135,588	6,058,348	44,682	0.24%
	PSPP	79,488	2,354,939	29,626	1.14%
2013	SETHEEPP	132,900	6,236,930	46,929	2.48%
	PSPP	77,064	2,374,948	30,818	1.99%

SCHEDULE OF RETIRED MEMBER VALUATION DATA

Actuarial Valuation July 1		Number	Annual Payroll In Thousands	Average Annual Allowances	Average Annual Percentage Increase In Annual Allowances
2005	SETHEEPP	65,094	$ 939,549	$14,434	4.63%
	PSPP	24,799	143,275	5,777	4.24%
2007	SETHEEPP	70,703	1,117,789	15,810	4.66%
	PSPP	27,527	174,211	6,329	4.67%
2009	SETHEEPP	77,310	1,281,514	16,576	2.39%
	PSPP	30,565	205,326	6,718	3.03%
2011	SETHEEPP	83,041	1,457,974	17,557	2.92%
	PSPP	33,544	241,910	7,212	3.61%
2013	SETHEEPP	90,414	1,682,792	18,612	2.96%
	PSPP	37,157	286,338	7,706	3.37%

The information in this schedule is based on prior actuarial valuations and will be presented differently in future actuarial valuations based on changes due to legislative enactments and GASB pronouncements.

SETHEEPP – State Employees, Teachers, Higher Education Employees Pension Plan
PSPP – Political Subdivisions Pension Plan

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SCHEDULE OF RETIRED MEMBER ACTIVITY

Actuarial Valuation July 1		Added to Rolls		Removed from Rolls		Rolls - End of Year		Percentage Increase in Annual Allowances	Average Annual Allowances
		No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances		
2005	SETHEEPP	8,453	$ 179,572	3,965	$ 39,052	65,094	$ 939,549	17.59%	$ 14,434
	PSPP	3,705	29,169	1,579	6,447	24,799	143,275	18.85%	5,777
2007	SETHEEPP	9,427	219,034	3,818	40,794	70,703	1,117,789	18.97%	15,810
	PSPP	4,396	38,751	1,668	7,815	27,527	174,211	21.59%	6,329
2009	SETHEEPP	10,677	212,772	4,070	49,047	77,310	1,281,514	14.65%	16,576
	PSPP	4,752	39,522	1,714	8,407	30,565	205,326	17.86%	6,718
2011	SETHEEPP	10,090	233,149	4,359	56,689	83,041	1,457,974	13.77%	17,557
	PSPP	4,955	47,632	1,976	11,048	33,544	241,910	17.82%	7,212
2013	SETHEEPP	12,199	289,437	4,826	64,619	90,414	1,682,792	15.42%	18,612
	PSPP	5,858	56,987	2,245	12,559	37,157	286,338	18.37%	7,706

Note: Timing differences exist between the data utilized for statistical information and that used for actuarial valuation purposes.

ACTUAL VS. RECOMMENDED CONTRIBUTION RATES

The Board adopted the contribution rates as recommended by the actuary.

The information in this schedule is based on prior actuarial valuations and will be presented differently in future actuarial valuations based on changes due to legislative enactments and GASB pronouncements.

SETHEEPP – State Employees, Teachers, Higher Education Employees Pension Plan
PSPP – Political Subdivisions Pension Plan

Actuarial Balance Sheet as of July 1, 2013

	Teacher Legacy Pension Plan	Public Employee Retirement Plan	Total
ASSETS			
Present assets creditable to:			
Employer accumulation fund	$ 16,306,892,102	$ 17,986,207,216	$ 34,293,099,318
Members' accumulation fund	3,186,908,392	1,769,310,216	4,956,218,608
Total present assets	19,493,800,494	19,755,517,432	39,249,317,926
Present value of prospective contributions payable to:			
Employer accumulation fund			
Normal	1,900,941,405	2,834,849,121	4,735,790,526
Accrued liability	806,790,144	1,857,325,810	2,664,115,954
Total employer accumulation	2,707,731,549	4,692,174,931	7,399,906,480
Member's accumulation fund	1,842,985,351	565,516,463	2,408,501,814
Total prospective contributions	4,550,716,900	5,257,691,394	9,808,408,294
TOTAL ASSETS	$ 24,044,517,394	$ 25,013,208,826	$ 49,057,726,220
LIABILITIES			
Present value of prospective benefits payable on account of:			
Present retired members and beneficiaries	11,179,309,840	10,643,750,163	21,823,060,003
Present active members	12,528,153,285	13,541,859,239	26,070,012,524
Former members	337,054,269	827,599,424	1,164,653,693
TOTAL LIABILITIES	$ 24,044,517,394	$ 25,013,208,826	$ 49,057,726,220

Short-Term Solvency Test

The financing objective of the Tennessee Consolidated Retirement System is to pay for the benefits provided by the plan through contributions that remain approximately level from year to year as a percentage of payroll, except that the strategy to fund the unfunded accrued liability is to make level-dollar payments over an established amortization period. A short-term solvency test is one means of checking a system's progress under its funding program. In a short-term solvency test, the plan's present assets are compared with: (1) active member contributions on deposit; (2) the liabilities for future benefits to present retired lives; and (3) the liabilities for service already rendered by active members. In a system that has been following the approach of level percent of payroll financing for some time, the liabilities for active member contributions on deposit (liability 1) and the liabilities for future benefits to present retired lives (liability 2) should be fully covered by present assets. In addition, the liabilities for service already rendered by active members (liability 3) should be partially covered by the remainder of present assets. Generally, if the system has been using level cost financing, the funded portion of liability 3 will increase over time.

Dollar Amounts Expressed in Millions

	Actuarial Accrued Liabilities for:				Portion of Actuarial Accrued Liabilities Covered by Assets		
Actuarial Valuation July 1	(1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Members (Employer Financed)	Valuation Assets	(1)	(2)	(3)
2005 SETHEEP	$3,167.4	$10,599.5	$9,900.1	$23,627.2	100%	100%	100%
PSPP	797.0	1,563.9	2,089.2	4,124.0	100%	100%	84%
Total	$3,964.4	$12,163.4	$11,989.3	$27,751.2	100%	100%	97%
2007 SETHEEP	$3,386.8	$12,544.7	$11,308.6	$26,215.0	100%	100%	91%
PSPP	896.8	1,902.9	2,676.0	4,898.0	100%	100%	78%
Total	$4,283.6	$14,447.6	$13,984.6	$31,113.0	100%	100%	89%
2009 SETHEEP	$3,559.8	$14,122.8	$11,372.4	$26,335.2	100%	100%	76%
PSPP	1,011.3	2,190.0	2,942.4	5,304.5	100%	100%	71%
Total	$4,571.1	$16,312.8	$14,314.8	$31,639.7	100%	100%	75%
2011 SETHEEP	$3,707.0	$15,941.3	$13,059.3	$30,118.2	100%	100%	80%
PSPP	1,100.8	2,560.6	3,700.3	6,562.6	100%	100%	78%
Total	$4,807.8	$18,501.9	$16,759.6	$36,680.8	100%	100%	80%
2013 SETHEEP	$3,759.9	$18,747.4	$11,616.3	$31,851.0	100%	100%	80%
PSPP	1,196.3	3,075.7	1,991.6	7,398.3	100%	100%	100%
Total	$4,956.2	$21,823.1	$13,607.9	$39,249.3	100%	100%	92%

The information in this schedule is based on prior actuarial valuations and will be presented differently in future actuarial valuations based on changes due to legislative enactments and GASB pronouncements.

SETHEEPP – State Employees, Teachers, Higher Education Employees Pension Plan
PSPP – Political Subdivisions Pension Plan

The unfunded accrued liability represents the excess of the accrued actuarial liability over the actuarial value of assets. For funding purposes, the Board of Trustees of TCRS has adopted the frozen initial liability method.

Under this method, the unfunded accrued liability is being funded by level-dollar contributions. Also, actuarial gains and losses are absorbed in normal cost rather than as part of the unfunded liability. The statute governing TCRS allows the Board of Trustees to reestablish the unfunded accrued liability for actuarial gains and losses.

For the July 1, 2013 actuarial valuation, the Board reestablished the unfunded accrued liability. In an inflationary economy where the covered payroll continues to grow, the level-dollar amounts which are being contributed to fund the unfunded accrued liability will, if expressed as a percentage of payroll, continue to decrease.

While concern is generally expressed regarding the dollar amount of the unfunded accrued liability, an analysis should also include the method being used to fund this liability as well as a review of this liability expressed as a percentage of active member payroll. The smaller the ratio of unfunded liabilities to the active member payroll, the stronger the system. A review of this ratio over a period of years will give an indication of whether the system is becoming financially stronger or weaker with respect to its unfunded liabilities.

SUMMARY OF ACCRUED AND UNFUNDED ACCRUED LIABILITIES

Dollar Amounts Expressed in Millions

Actuarial Valuation Jul 1	Actuarial Accrued Liabilities (AAL)	Valuation Assets	Ratio Assets to AAL	Unfunded Actuarial Accrued Liabilities (UAAL)	Active Member Payroll	UAAL as a Percentage of Active Member Payroll
2011	$ 40,069.3	$ 36,680.8	91.54%	$ 3,388.5	$ 8,413.3	40.28%
2013	41,913.4	39,249.3	93.64%	2,664.1	8,611.9	30.94%
2014	43,407.3	42,905.2	98.84%	502.1	9,053.6	5.55%

Notes:

This schedule is the aggregate of all TCRS plans.

SELECTED ACTUARIAL FUNDING INFORMATION

Actuarial Valuation Year	Earnings Assumptions	Salary Assumptions	Unfunded Liability		State Amortization Period (1)
			TLPP	PERP	
2014	7.50%	4.25% (2)	$ (16,249,535)	518,397,971	N/A

Notes:

(1) The amortization period is for funding purposes. The values shown are based on the GASB 68 requirements.

(2) Graded Scale

(3) The information in this schedule is based upon the GASB 68 pronouncement and legislative changes. The legislative changes changed the plans presented beginning July 1, 2014 and, therefore, prior year data is not presented.

GAIN AND LOSS ANALYSIS, JULY 1, 2013 VALUATION

	Consolidated State	Teacher
Normal Cost Effective Employer Normal Cost Rate Pursuant to 2011 Valuation	15.14%	8.88%
Investment Results	2.56%	2.37%
Salary Increases: The annual weighted-average rate of salary increase during the 2011-2013 period was below the assumed age-based rated used in preparing the 2011 valuation report. This resulted in a reduction in the contribution rate.	(0.40%)	(0.59%)
New Entrants: Includes the effect where normal cost for new entrants since the previous valuation differs from the normal cost of the group.	(0.59%)	(0.01%)
Cost of Living Escalation: COLA in 2012 and 2013 were 3.0% and 1.7%, respectively, for combined effect of 2.35%, which is less than the assumed 2.5% per year.	(0.13%)	(0.11%)
Prior Service Purchases: Employee purchases of prior service credits result in liabilities to the plan that are not fully offset by related employee contributions.	0.10%	0.10%
Contribution rate change delay	0.02%	(0.02%)
Effect of Turnover on total payroll	1.38%	0.74%
Other	0.11%	(0.31%)
Assumption Changes resulting from 2012 Experience Study	0.18%	0.30%
Reamortization of unfunded liability (8-year amortization for teachers, 13-year amortization for State)	(3.23%)	(2.31%)
Effective Employer Normal Cost Rate Pursuant to 2013 Valuation	15.14%	9.04%

History and Administration

The TCRS was established in 1972 by an Act of the Tennessee General Assembly. Seven existing retirement systems were consolidated to provide retirement, disability and death benefits to state employees, public school teachers, higher education employees and the employees of participating local governments. State laws governing the plan may be found in Chapters 34-37, 39 of Title 8, *Tennessee Code Annotated*. Amendments to the plan can only be made by legislation enacted by the General Assembly of the State of Tennessee.

A 20-member Board of Trustees has the responsibility to manage and oversee the operation of the consolidated system. The Board consists of nine ex-officio members from the executive, legislative and judicial branches of state government, nine representatives of the active TCRS membership and two representatives for retirees. Employee representation consists of three teachers, one from each grand division of the state; two state employees from departments other than those represented by ex-officio members; three representatives of local governments; one public safety officer; one retired state employee representative; and one retired teacher representative. Local government representatives are appointed for two-year terms by each of the following organizations: the Tennessee County Services Association, the Tennessee Municipal League and the Tennessee County Officials Association. All employee representatives must be vested members of TCRS.

TCRS is administered by the Treasury Department under the legislative branch of state government. By state law, the State Treasurer serves as chairman of the Board of Trustees and as custodian of the funds of the system. The Director of the retirement system is appointed by the Treasurer and serves as the chief administrative officer of the plan.

The state is responsible for the pension cost of state employees; pension costs for teachers are the responsibility of the local education agencies in Tennessee; costs for the participation of local government employees are paid by political subdivisions. Administrative expenses are paid from employers' account balances. The operating budget is funded by local governments on a per-member fee basis and by state government as part of the employer contribution rate.

Membership

Membership in the retirement system is a condition of employment for full-time state employees, K-12 teachers, higher education general employees and the employees of participating local governments. Membership is optional for part-time state employees and the part-time employees of political subdivisions which have authorized such coverage.

Interim teachers and part-time teachers have optional membership. The faculty employees of institutions of higher education may elect participation in either TCRS or an optional retirement program (ORP), a defined contribution plan for higher education faculty.

State employees, higher education employees and K-12 public school teachers hired after June 30, 2014 will participate in a Hybrid Pension Plan for State Employees and Teachers.

Contributions

TCRS membership became noncontributory on July 1, 1981 for most state employees, teachers in state supported institutions of higher education and teachers employed in the Department of Education. At that time, the contributions, up to 5.0 percent of compensation payable to these employees, were assumed by the state, but this amount continued to be credited to the individual members' accounts from employer funds. State employees hired after July 1, 1981 join TCRS as noncontributory members with no funds credited to their individual accounts. State employees, teachers in state supported institutions of higher education and teachers employed by the Department of Education hired after June 30, 2014 contribute at a rate of 5.0 percent of gross salary.

(continued)

Participating political subdivisions may either adopt noncontributory retirement provisions or require employee contributions. The contribution rate for local government employees is 5.0 percent up to the Social Security wage base and 5.5 percent above that base, unless the employing government has authorized a level 5.0 percent rate. Public school teachers contribute at a rate of 5.0 percent of gross salary.

Individual accounts are maintained for all contributory members with interest credited annually at a rate of 5.0 percent. Since the TCRS is a defined benefit plan, benefits are based upon the member's average final compensation and years of creditable service. The member's account balance including interest accrued has no bearing on the monthly benefit amount payable at retirement. Account balances plus interest are fully refundable upon termination of service or death.

Contributory members are covered by Section 414(h) of the Internal Revenue Code. Under this provision, retirement contributions are made on a tax-deferred basis, with income tax due only when contributions are returned to members as benefits or refunds. Political subdivisions may adopt the 414(h) provision for their employees.

The state also makes contributions on behalf of higher education faculty members who select membership in the ORP. These contributions are equal to 10 percent of salary up to Social Security wage base and 11 percent of any excess salary.

For ORP participants hired after June 30, 2014, the state will contribute 9.0 percent of salary to the ORP. The employee will contribute 5.0 percent of gross salary to the ORP.

Benefits

General

TCRS provides three valuable benefits to its members: disability, death and service retirement benefits. Disability benefits are available to qualified TCRS members who become totally disabled before meeting the requirements for service retirement. Two types of disability retirement are available: ordinary and accidental.

To qualify for ordinary disability, a member must have a minimum of five years of TCRS service credit. The ordinary disability benefit is equal to 90 percent of what the member would receive under service retirement. If a disabled retiree has less than 20 years of service credit, the service is projected to age 60 or 20 years, whichever comes first. When service is projected, the actual and projected service combined cannot exceed 20 years. If the member's actual service credit exceeds 20 years, the benefit is based on actual service only.

There is no minimum service requirement to qualify for an accidental disability benefit. However, the disability must be the result of a job-related accident that occurs without negligence on the part of the member during the performance of duty. Prior to the onset of Social Security benefits, an accidental disability benefit is equal to 50 percent of the member's average final compensation (AFC). Once Social Security benefits begin, the accidental benefit is 33.3 percent of AFC. For members joining TCRS on or after July 1, 1997, accidental disability benefits are determined in the same manner as ordinary disability using the projection of service method. Disability benefits are increased by 5.0 percent for state employees, teachers and employees of participating political subdivisions which have authorized the 5.0 percent benefit improvement. The accidental benefit is adjusted if the member's combined benefits from Social Security and/or workers' compensation exceed 75 percent of his AFC.

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One of several death benefits may be payable to the designated beneficiary of an active member who dies prior to retirement. The type of death benefit payable will be determined by whether or not death occurred while in service, who is named as beneficiary and the member's length of service.

Legacy Plan for Members Before July 1, 2014

A member may designate one or more persons, his estate, an institution or any combination of such as his beneficiary. However, estates, institutions and/or multiple beneficiaries are only eligible for a lump-sum refund of the member's accumulated contributions and interest unless one of the beneficiaries named is the surviving spouse. Other death benefits offered by TCRS include a 100 percent Joint and Surviving Spouse Annuity after ten years of service, a 100 percent Joint and Survivor Annuity for any beneficiary and a Line-of-Duty Benefit. Any beneficiary of a member who had ten years of service and who is eligible for a lump-sum death benefit may elect a benefit to be paid over ten years.

All members hired prior to July 1, 2014, with the exception of state judges, joining TCRS after 1976 enter the same membership group. The benefit formula for this group provides 1.5 percent of AFC computed over five years for each year of service credit. If a member's AFC exceeds the Social Security integration level (SSIL) applicable at retirement, the formula provides an additional .25 percent of the amount of the excess for each service year. These benefits are increased by 5.0 percent for state employees, teachers and employees of participating political subdivisions which have authorized the 5.0 percent benefit improvement. State judges joining TCRS after September 1, 1990 become Group IV members. The benefit formula for Group IV members is 2.5 percent of AFC computed over five years for each year of service credit.

Members become eligible for regular service retirement at age 60 if vested or at any age with 30 years. Vested members are eligible for reduced early retirement benefits when they have reached age 55 or have completed 25 years of service. Members joining TCRS after June 30, 1979 attain vesting rights after five years of service; the vesting period for members who joined prior to July 1, 1979 is four years. Five-year vesting and 25-year retirement are benefits that are optional to local governments. Otherwise, vesting for local governments is ten years of service.

Hybrid Plan for Members After June 30, 2014

State employees, higher education employees and K-12 teachers, with the exception of state judges, the State Attorney General, elected District Attorneys General, and elected Public Defenders, becoming members after June 30, 2014 enter the same membership group. The benefit formula for this group provides 1.0 percent of AFC computed over five years for each year of service credit. The benefit formula for State judges, the State Attorney General, elected District Attorneys General, and elected Public Defenders provides 1.6 percent of AFC computed over five years for each year of service credit. Local governments have the option to join this plan

Members become eligible for regular service retirement at age 65 if vested or the Rule of 90. The Rule of 90 refers to a combination of age and service that total 90. Vested members are eligible for reduced early retirement benefits at age 60 if vested or the Rule of 80. Members attain vesting rights after five years of service.

Services for Active Members

TCRS provides a number of services for active members through its various sections. Member self-service is available at www.mytcrs.com. Detailed member information, including salary and service history, is available on the secured portal.

Field Services

* TCRS staff is available to conduct employee presentations on all aspects of the retirement system.
* Employer seminars are conducted biennially to educate payroll officers on legislation affecting TCRS and inform them of the employer contribution rates effective for the next two fiscal years.

Membership

* Comprehensive membership statements are provided to all members annually.
* Computer-generated membership letters are mailed to all new members.
* Membership booklets are available to members upon request.

Prior Service

* An automated calculation and eligibility system generates billings for members who wish to establish prior service.
* An installment program is available to purchase certain types of prior service.
* Prior Service may be purchased with a rollover from a tax-deferred 401(a) plan, 401(k) plan, 403(b) plan, 457 plan or a traditional or Roth IRA.

Benefits

* Computer-generated benefit estimates are available.
* Employee benefit counseling workshops are available to educate potential retirees.
* TCRS counseling staff provides personal counseling to members by telephone and in their Nashville office.
* TCRS seminars, which explain all facets of pre-retirement planning, are provided for members.

Services for Retired Members

A number of services are made available to TCRS retirees.

* A toll-free telephone line
* Retiree identification cards
* Semiannual retiree newsletter: *The Retiree Advisor*
* Direct deposit service
* Continuation of medical insurance
* Continuation of dental insurance
* Medicare supplement coverage
* Income tax information
* Certification of monthly benefits
* Certification of student discounts
* Credit Union deductions
* Tennessee State Employee Association deductions
* Tennessee Retired Teachers Association deductions
* Retiree self-service at www.mytcrs.com

Tennessee's Retirement Program, TCRS and Social Security Benefits *for Calendar Year 2015*

Five-Year AFC*	Projected Annual Retirement Income	15 Years Service	% of AFC	20 Years Service	% of AFC	25 Years Service	% of AFC	30 Years Service	% of AFC	35 Years Service	% of AFC
$15,000	TCRS	$ 3,544		$ 4,725		$ 5,906		$ 7,088		$ 8,269	
	Social Security	9,720		9,720		9,720		9,720		9,720	
	Total	$ 13,264	88.4%	$ 14,445	96.3%	$ 15,626	104.2%	$ 16,808	112.1%	$ 17,989	119.9%
$20,000	TCRS	$ 4,725		$ 6,300		$ 7,875		$ 9,450		$ 11,025	
	Social Security	11,220		11,220		11,220		11,220		11,220	
	Total	$ 15,945	79.7%	$ 17,520	87.6%	$ 19,095	95.5%	$ 20,670	103.4%	$ 22,245	111.2%
$25,000	TCRS	$ 5,906		$ 7,875		$ 9,844		$ 11,813		$ 13,781	
	Social Security	12,732		12,732		12,732		12,732		12,732	
	Total	$ 18,638	74.6%	$ 20,607	82.4%	$ 22,576	90.3%	$ 24,545	98.2%	$ 26,513	106.1%
$30,000	TCRS	$ 7,088		$ 9,450		$ 11,813		$ 14,175		$ 16,538	
	Social Security	14,220		14,220		14,220		14,220		14,220	
	Total	$ 21,308	71.0%	$ 23,670	78.9%	$ 26,033	86.8%	$ 28,395	94.7%	$ 30,758	102.5%
$35,000	TCRS	$ 8,269		$ 11,025		$ 13,781		$ 16,538		$ 19,294	
	Social Security	15,720		15,720		15,720		15,720		15,720	
	Total	$ 23,989	68.5%	$ 26,745	76.4%	$ 29,501	84.3%	$ 32,258	92.2%	$ 35,014	100.0%
$40,000	TCRS	$ 9,450		$ 12,600		$ 15,750		$ 18,900		$ 22,050	
	Social Security	17,220		17,220		17,220		17,220		17,220	
	Total	$ 26,670	66.7%	$ 29,820	74.6%	$ 32,970	82.4%	$ 36,120	90.3%	$ 39,270	98.2%
$45,000	TCRS	$ 10,631		$ 14,175		$ 17,719		$ 21,263		$ 24,806	
	Social Security	18,732		18,732		18,732		18,732		18,732	
	Total	$ 29,363	65.3%	$ 32,907	73.1%	$ 36,451	81.0%	$ 39,995	88.9%	$ 43,538	96.8%
$50,000	TCRS	$ 11,813		$ 15,750		$ 19,688		$ 23,625		$ 27,563	
	Social Security	20,232		20,232		20,232		20,232		20,232	
	Total	$ 32,045	64.1%	$ 35,982	72.0%	$ 39,920	79.8%	$ 43,857	87.7%	$ 47,795	95.6%
$55,000	TCRS	$ 12,994		$ 17,325		$ 21,656		$ 25,988		$ 30,319	
	Social Security	21,720		21,720		21,720		21,720		21,720	
	Total	$ 34,714	63.1%	$ 39,045	71.0%	$ 43,376	78.9%	$ 47,708	86.7%	$ 52,039	94.6%
$60,000	TCRS	$ 14,175		$ 18,900		$ 23,625		$ 28,350		$ 33,075	
	Social Security	22,908		22,908		22,908		22,908		22,908	
	Total	$ 37,083	61.8%	$ 41,808	69.7%	$ 46,533	77.6%	$ 51,258	85.4%	$ 55,983	93.3%
$65,000	TCRS	$ 15,356		$ 20,475		$ 25,594		$ 30,713		$ 35,831	
	Social Security	23,604		23,604		23,604		23,604		23,604	
	Total	$ 38,960	59.9%	$ 44,079	67.8%	$ 49,198	75.7%	$ 54,317	83.6%	$ 59,435	91.4%
$70,000	TCRS	$ 16,538		$ 22,050		$ 27,563		$ 33,075		$ 38,588	
	Social Security	24,312		24,312		24,312		24,312		24,312	
	Total	$ 40,850	58.4%	$ 46,362	66.2%	$ 51,875	74.1%	$ 57,387	82.0%	$ 62,900	89.9%

* Average Final Compensation (AFC) is the average of the member's five highest consecutive years of salary.

This chart is based on a date of retirement in 2015. Social Security benefits have been calculated by Bryan, Pendleton, Swats & McAllister, actuarial consultants for the TCRS, utilizing the following assumptions: (1) retirement is taking place at age 65 in 2015; (2) the retiree has worked a full career (TCRS plus other employers, if necessary) of 35 years or more; and (3) salary increases throughout the retiree's career have followed the same pattern as National Average Earnings.

The department's Internet benefits calculator allows members to receive an immediate estimate: treasury.tn.gov/tcrs.

1972 Benefit formula improved from 1.12 percent of salary up to the SSIL to 1.5 percent of salary up to the SSIL.

1973 Annual cost-of-living increase based on the CPI with a cap of 1.5 percent adopted for retirees.

1974 Disability retirement eligibility requirement reduced from ten years to five years of service.

Maximum annual cost-of-living increase raised to 3.0 percent.

Provision to increase retirees' benefits whenever the benefit formula is improved.

Service credit authorized for unused accumulated sick leave.

1976 Service retirement eligibility requirements reduced from age 65 or 35 years of service to age 60 or 30 years of service.

Early retirement eligibility requirements reduced from age 60 or 30 years of service to age 55.

1978 A bonus cost-of-living increase granted to retirees at a lump-sum cost of $15.3 million.

An optional retirement plan established for teachers in the Board of Regents system.

1980 Death benefits for members dying in-service with ten years of service improved by offering a 100 percent joint and survivor annuity of the member's accrued benefit for the spouse.

1981 Noncontributory retirement for state employees and higher education employees adopted. Employees' contributions, up to 5.0 percent, were assumed by the state.

1983 An actuarially-reduced retirement benefit at any age with 25 years of service authorized.

1984 Credit for out-of-state service for the purpose of determining retirement eligibility authorized.

Retirement credit for armed conflict approved.

Part-time employees permitted to participate in TCRS and members allowed to establish credit for previous part-time employment.

1985 $22 million ad-hoc increase granted to retirees.

1987 Service credit for half of peacetime military service made available.

$17 million ad-hoc increase granted to retirees.

Retirement incentive for state employees.

Section 414(h) of the IRC adopted, allowing employee contributions to be made on a tax-deferred basis.

1990 Retirement incentive for state employees.

1991 3.6 percent indexing of salaries for noncontributory employees extended one year. Each succeeding year up to 1997, the 3.6 percent indexing was extended. In 1997, it was extended indefinitely.

1992 Minimum number of years required to qualify for retirement was reduced from ten years to five years.

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1993 Salary portability for service in different classifications authorized effective January 1, 1994.

Benefit improvement up to 5.0 percent authorized.

1997 Compounded COLA for retirees approved.

1998 Group 2 and Group 3 service requirements amended to permit service retirement with 30 years of service, regardless of age.

Group 1 and Prior Class C benefit limitations increased to 80 percent.

Mandatory retirement established with supplemental bridge benefit for all state public safety officers.

1999 Group 1 benefit maximum increased to 90 percent.

2000 Group 2 benefit maximum increased to 80 percent.

2001 Line-of-Duty Death Benefits adopted to guarantee a minimum $50,000 death benefit.

2005 Return-to-Work statutes were reformed, including a temporary employment increase to 120 days.

2006 Ad-hoc increase granted to members retired prior to 1989.

2007 Public Safety Officer benefits were enhanced.

2012 New plan options offered to local governments.

2013 Hybrid plan enacted for state employees and teachers hired after July 1, 2014.