



Bryan, Pendleton, Swats & McAllister, LLC
A Wells Fargo Company



TENNESSEE CONSOLIDATED RETIREMENT SYSTEM

Actuarial Funding Valuation – Hybrid Pension Plans
Valuation Date: July 1, 2015

March 18, 2016

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Valuation Purpose

- Determine employer contribution rates for defined benefit component of new Hybrid Plan (TCA Section 8-35-256)
 - Valuation Date: 7/1/2015
 - New Rates Effective: 7/1/2016
- Examine financial health of plan
- Separate process and reporting for GASB 67/68

System Overview

- New Hybrid Plan began 7/1/2014 with new employees only
- Employees hired prior to 7/1/2014 continue in Legacy Plan
- Hybrid Plan contribution rates as of 7/1/2014
 - No employee data and no assets accumulated as of 7/1/2014
 - Employer contribution rates for the Hybrid Plan were initially established based on a conservative, best estimate calculation of the long-term cost of a typical new employee
- Hybrid Plan contribution rates as of 7/1/2015 (eff. 7/1/2016)
 - Utilizes one year of new employee data and plan contributions/plan assets
 - Future actuarial valuations will adjust employer contribution rates as necessary to reflect actual plan experience
 - Some variance in employer rates is likely as the plan population grows

System Overview – Plan Design

	Legacy Plan	Hybrid Plan*
Benefit Multiplier	1.575%	1.0%
Full Retirement	Age 60/30 YOS	Age 65/Rule of 90
Early Retirement	Age 55/25 YOS	Age 60/Rule of 80
Employee Contributions	State-0%;TCH-5%	State-5%;TCH-5%
Cost of Living Adjustment	CPI (Max 3%)	CPI (Max 3%)
Defined Contribution Component	None	5% From Employer
Stabilization Reserve	None	Yes
Cost Controls	None	9% Employer Target
Unfunded Liability Controls	None	Limit: 12.5% of State Indebtedness

**PSO eligible for additional bridge benefit and enhanced eligibility.*

**State Judges eligible for 1.6% multiplier and enhanced eligibility.*

Active Membership by Number (Hybrid Plans)

<u>Group</u>	<u>7/1/2015</u>
Teachers	5,524
State	5,373
State Judges	29
Total	<u>10,926</u>

Valuation Asset Method

- Use “smoothing” device to limit contribution volatility
- Phase-in excess or deficit earnings compared to the earnings assumption ratably over ten-year period
- Utilize 80%/120% corridor
- Resulting value is “Actuarial Value of Assets”
- Actuarial Value of Assets is only used to determine contribution rates pursuant to the TCRS funding policy (Market Value of Assets used for GASB reporting)

Valuation Asset Gains and Losses (Hybrid Plans)

- Year 1 investment return: 3.3% (7.5% assumed)
- Deferred Loss = 90% of Year 1 Loss
- Market Value of Assets (MVA)
 - State (General Employees & Judges) - \$7,423,267
 - Teacher - \$15,442,846
- Actuarial Value of Assets (AVA)
 - State (General Employees & Judges) - \$7,568,679
 - Teacher - \$15,745,352
- Ratio of AVA to MVA = 101.96%

Stabilization Reserve (Hybrid Plans)

- Stabilization Reserve
 - State (General Employees & Judges) - \$1,966,276
 - Teacher - \$3,232,080
- Accumulation of additional employer contributions in excess of the Actuarially Determined Contribution Rate since 7/1/2014
- Excluded from the actuarial valuation calculations
- Included in the TCRS trust and invested consistently with other TCRS assets

Contribution Rate Determination

- Entry Age Normal funding method
- Normal Cost + Amortization of Unfunded Accrued Liability + Administrative Fee
- Level dollar amortization of Unfunded Accrued Liability
- Amortization periods adjusted each year to manage rate changes and are within requirements of state law and pursuant to TCRS funding policy

Unfunded Accrued Liability (Surplus) Actuarial Value of Assets - Hybrid Plans

	2015	2015 Funded Ratio
State General Employees	\$(1,016,979)	116.6%
State Judges	(15,550)	103.7%
Total State	\$(1,032,529)	115.8%
Teachers	\$(1,092,784)	107.5%

Excess assets are not used to offset the Normal Cost in the Employer Rate determination.

Hybrid Plan Employer Cost Estimates

Initial Estimates as of 7/1/2014

State	Actuarially Determined Contribution Rate	Total Employer Rate
General Employee	2.00%	3.87%
Public Safety Bridge	0.75%	0.75%
State Judges	7.00%	7.00%
Total Weighted Average*		4.00%
 Teachers	 2.50%	 4.00%

Stabilization Reserve Contribution = (Total Employer Rate – ADC Rate)

**State sub-group rates are weighted based on active payroll from the 2013 Legacy Plan actuarial valuation.*

Hybrid Plan Employer Rates

7/1/2015 Actuarial Funding Valuation

	Actuarially Determined Contribution Rate	Total Employer Rate
State		
General Employee	1.13%	3.94%
Public Safety Bridge	0.75%	0.75%
State Judges	6.27%	6.27%
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Total Weighted Average*		4.00%
 Teachers	 1.56%	 4.00%

Stabilization Reserve Contribution = (Total Employer Rate – ADC Rate)

**State sub-group rates are weighted based on active payroll from the 2015 actuarial valuation.*

Hybrid Plan Total Contribution Rates

	Actuarially Determined Contribution Rate	Employee Rate	Total Rate
State (2014)			
General Employee	2.00%	5.00%	7.00%
State Judges	7.00%	5.00%	12.00%
Teachers (2014)	2.50%	5.00%	7.50%
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State (2015)			
General Employee	1.13%	5.00%	6.13%
State Judges	6.27%	5.00%	11.27%
Teachers (2015)	1.56%	5.00%	6.56%

Future Considerations

- Total plan population will change materially each year
 - Year two new employees will represent substantial growth
 - First full year of salary available in next actuarial valuation
 - Could be some volatility in employer contribution rates while the plan grows and stabilizes (but likely to stay below the 4% threshold)
- Future investment gains and losses
- Stabilization reserve accumulation
- Other cost controls are available if necessary
- These calculations utilize assumptions adopted from the 2012 TCRS Legacy Plan Experience Study (with modifications made to retirement rates for changes in retirement eligibility and use of fully projected mortality rates)

Certification

This report has been prepared exclusively for TCRS to provide Hybrid Plan employer contribution rates. Bryan, Pendleton, Swats & McAllister, LLC, a Wells Fargo Company, is not responsible for consequences resulting from the use of any part of this report without prior authorization and approval. Determinations for other purposes may be different from the results shown in this report. This report provides actuarial advice and does not constitute legal, accounting, tax, or investment advice. This report has been prepared under the supervision of Justin C. Thacker, a member of the American Academy of Actuaries, a Fellow of the Society of Actuaries, and a consulting actuary with Bryan, Pendleton, Swats and McAllister, LLC, a Wells Fargo Company of Brentwood, Tennessee, who has met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions herein. To the best of our knowledge this report has been prepared in accordance with generally accepted actuarial standards, including the overall appropriateness of the analysis, assumptions, and results and conforms to appropriate Standards of Practice as promulgated from time to time by the Actuarial Standards Board, which standards form the basis for the actuarial report. We are not aware of any direct or material indirect financial interest or relationship that could create, or appear to create, a conflict of interest that would impair the objectivity of our work.



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March 18, 2016

Date