TEACHERS' AND STATE EMPLOYEES' RETIREMENT SYSTEM & LOCAL GOVERNMENTAL EMPLOYEES' RETIREMENT SYSTEM

BOARD OF TRUSTEES MEETING – July 2018

Actuarial Transition – Informational Update

North Carolina Total Retirement Plans

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Agenda

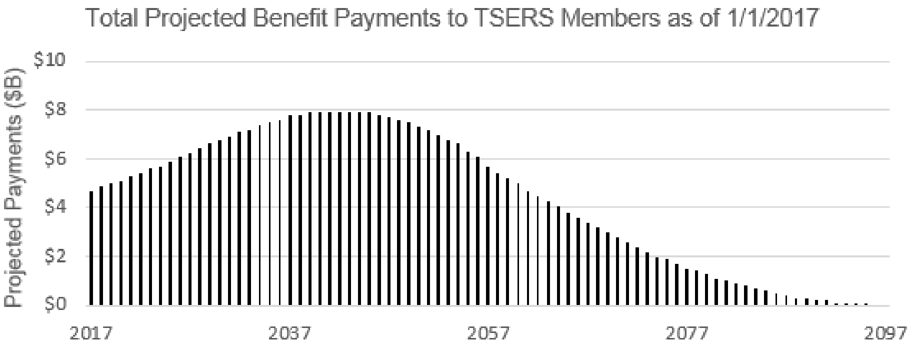
- Actuarial transition project
- Valuation results being “replicated”
- Variance inherent in transition
- Next steps

Actuarial Transition Project

- At meeting on January 25, 2018, Boards of Trustees designated Cavanaugh Macdonald Consulting (CMC) as the actuarial advisor to the Boards
- Work began immediately between RSD, CMC, and the prior actuary, with the goal of establishing CMC's valuation programming for our systems as accurately as possible
    - Transition applies to all retirement, disability, and death benefit programs
- Prior actuary has been helpful in sharing information and program-specific knowledge
- At meeting on April 26, 2018, CMC updated the Boards regarding:
    - Information collected in transition (including census data, assumption details, asset information, and past reports)
    - Purpose and nature of work involved in replicating prior actuary's valuation results
    - Inherent nature of variances in transitioning from one actuary to another
- CMC also shared the minimum industry standards (or acceptable tolerance levels) for unexplained variances compared to a prior actuary's work, as follows:
    - Present value of future benefit: 1-2%
    - Actuarial liability and normal cost: 4-5%
- Apart from the valuation results, CMC is also transitioning other actuarial work products, such as actuarial factors that the Retirement Systems use in calculating optional forms of pension payment and the cost of certain service purchases

Valuation Results Being "Replicated" (TSERS as Example)

1 Actuary estimates the benefit amounts payable to each member in each year in the future, based on many assumptions: Pay increases, likelihood of leaving or retiring, life expectancy, and more. (In NC's valuations, this projection includes only members as of the valuation date, not future members.)



2 Actuary determines "present value of all future benefits."

Discounted at 7.20% per year

$86.1 Billion Present Value

3 Actuary applies "cost method" to assign the value of benefits to past/future periods.

Past (Accrued)	$74.5B
Future – Member-Paid	$6.7B
Future – Employer-Paid	$4.9B
Total	**$86.1B**

4 Actuary uses this information, together with plan assets and other information, to develop the actuarially determined employer contribution (ADEC).

Variance Inherent in Transition

- Because of many differences in process, programming, or interpretation that may arise in the replication – especially steps 1 and 3 on the prior page – some degree of variance will <u>always</u> occur when transitioning systems of TSERS' or LGERS' size and complexity
- CMC expects variance to be well within previously stated tolerance levels, and continues to work to minimize the variances
- When determining the employer contribution rates, generally any transition variance would be viewed as an "experience gain or loss" whose effect is amortized
- Still, even a seemingly small variance can translate to a meaningful change in the contribution rate as a percentage of pay

Variance Inherent in Transition: Hypothetical Example

- **<u>Hypothetical</u>** example: Suppose for TSERS, the actuarial accrued liability and normal cost in the year-end 2016 valuation had been 0.50% greater, and other relevant measures (like the present value of future salaries) matched exactly
- Resulting ADEC for FY 2019 would have been greater by 0.30%-0.40% of payroll, before applying ECRSP or legislative changes
- Estimate is roughly scalable; for example, it would be roughly double for 1.00% (rather than 0.50%) increases
- In any given year, ECRSP or legislation might change the actual contribution rate
- This estimate is intended to provide a sense of how a transition variance might meaningfully affect the employer contribution rate; <u>it is not an estimate of the still-in-progress transition for any of the NC Retirement Systems</u>
- To be clear, the outcome of the actuarial transition is not a restatement of the year-end 2016 valuation; but the transition requires replicating the results of that valuation (or being able to explain any differences as well as possible) before proceeding with year-end 2017

Next Steps

- CMC will continue to finalize the transition, supported by RSD and prior actuary
- CMC will report to Boards at October meeting regarding final variances from the transition, as part of year-end 2017 valuation results that will be presented at that meeting