Retirement Systems of Minnesota

Minnesota State Retirement System • Public Employees Retirement Association • Teachers Retirement Association

Statewide Pension Fund Update and Experience Studies

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What is an ‘experience study’?

- Actuary conducts thorough review of all the underlying actuarial methods and assumptions used in a pension fund’s annual actuarial valuation to determine whether they continue to be **accurate and reasonable.**
- Experience study typically done every four years. Recent experience study covered past six years.
- Looks at the system’s actual experience, and looks forward to **predict future experience,** especially economic assumptions such as inflation and investment returns.
- Helps assure that annual valuations are accurately stating the system’s **long-term projected costs and required contribution rates.**
- Assumptions are long-term estimates that cover 30-50-year period. Two types of assumptions: ***economic*** and ***demographic.***

Experience study findings: Economic assumptions

Inflation

- Expectations for price of inflation are lower and have been for some time. Social Security Administration projections assume 2.70% over next 75 years.

Wage inflation/payroll growth

- Components are price inflation plus real wage growth (productivity). Salary increases have been lower due to lower inflation.

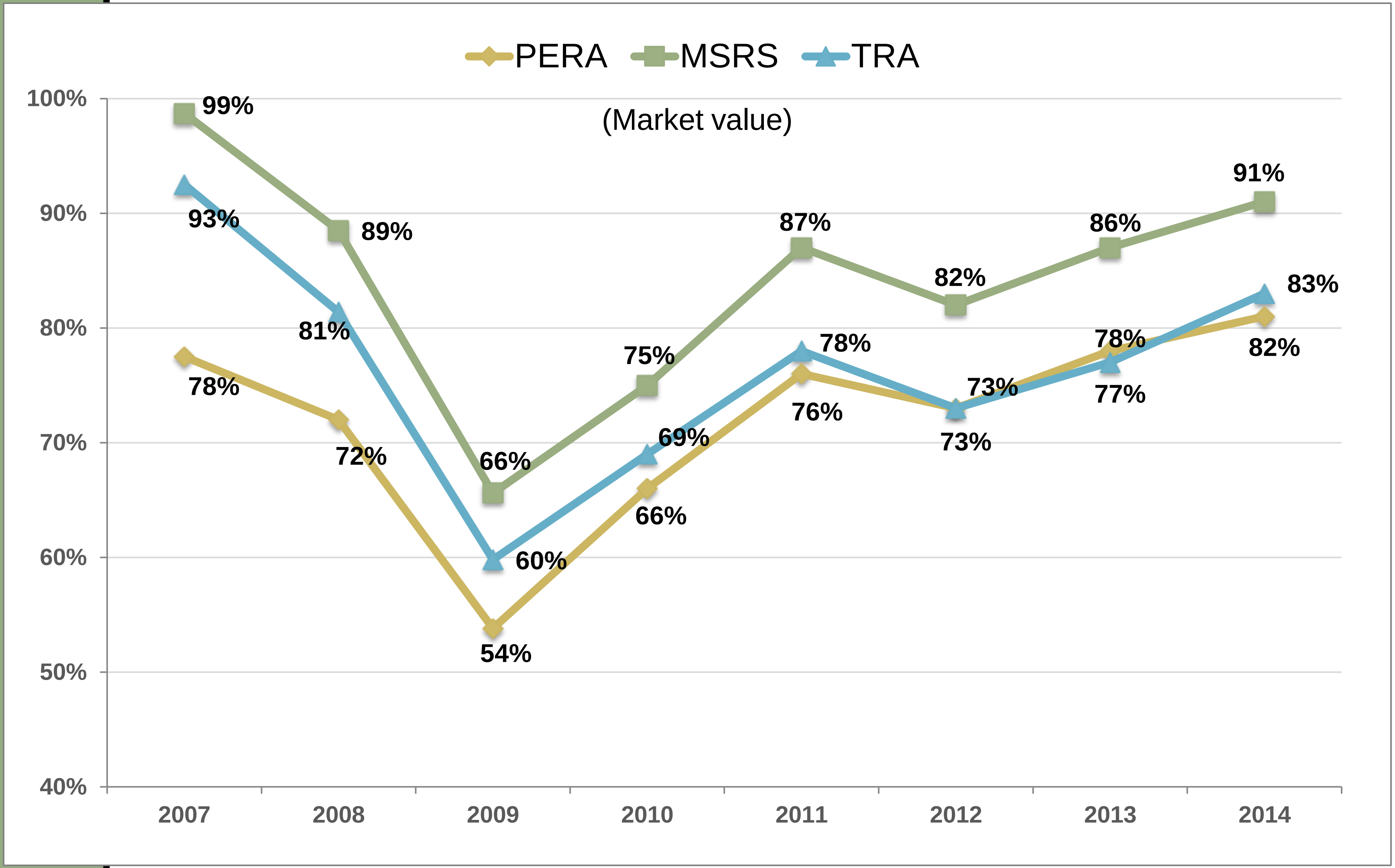
Investment returns

- The components are inflation plus expected real investment return. Expectations for the long term are lower.

Recommendations: Economic assumptions

- **Inflation assumption recommendation**
  - Lower price inflation assumption from 3.0 percent to 2.75 percent.
  - PERA/MSRS: Already enacted in 2015 session.
  - TRA: Actuary recommends same change.
- **Wage inflation/payroll growth assumption recommendation**
  - Lower general wage inflation assumption (also used for payroll growth) from 3.75 percent to 3.5 percent.
  - PERA/MSRS: Already enacted in 2015 session.
  - TRA: Actuary recommends same change.
- **Investment return assumption recommendations**
  - Lower long-term investment return assumption to 8 percent.
  - PERA/MSRS: Already enacted in 2015 session.
  - TRA: Actuary recommends same change.

Funds rebound from market downturn



Key findings: Demographic assumptions

- **Retirement rates/ages:** Members working longer and retiring later yields slight savings.
- **Withdrawal/terminations:** Actuaries recommend using service-based withdrawal rates to replace age-based, with negligible financial impact.
- **Disability rates:** PERA and MSRS observed lower disability rates, yielding small savings. TRA observed no change.
- **Mortality:** Analyzed mortality for retirees, actives, disabled and males/females.
    - Members and retirees are living much longer – on average an extra **two years**.

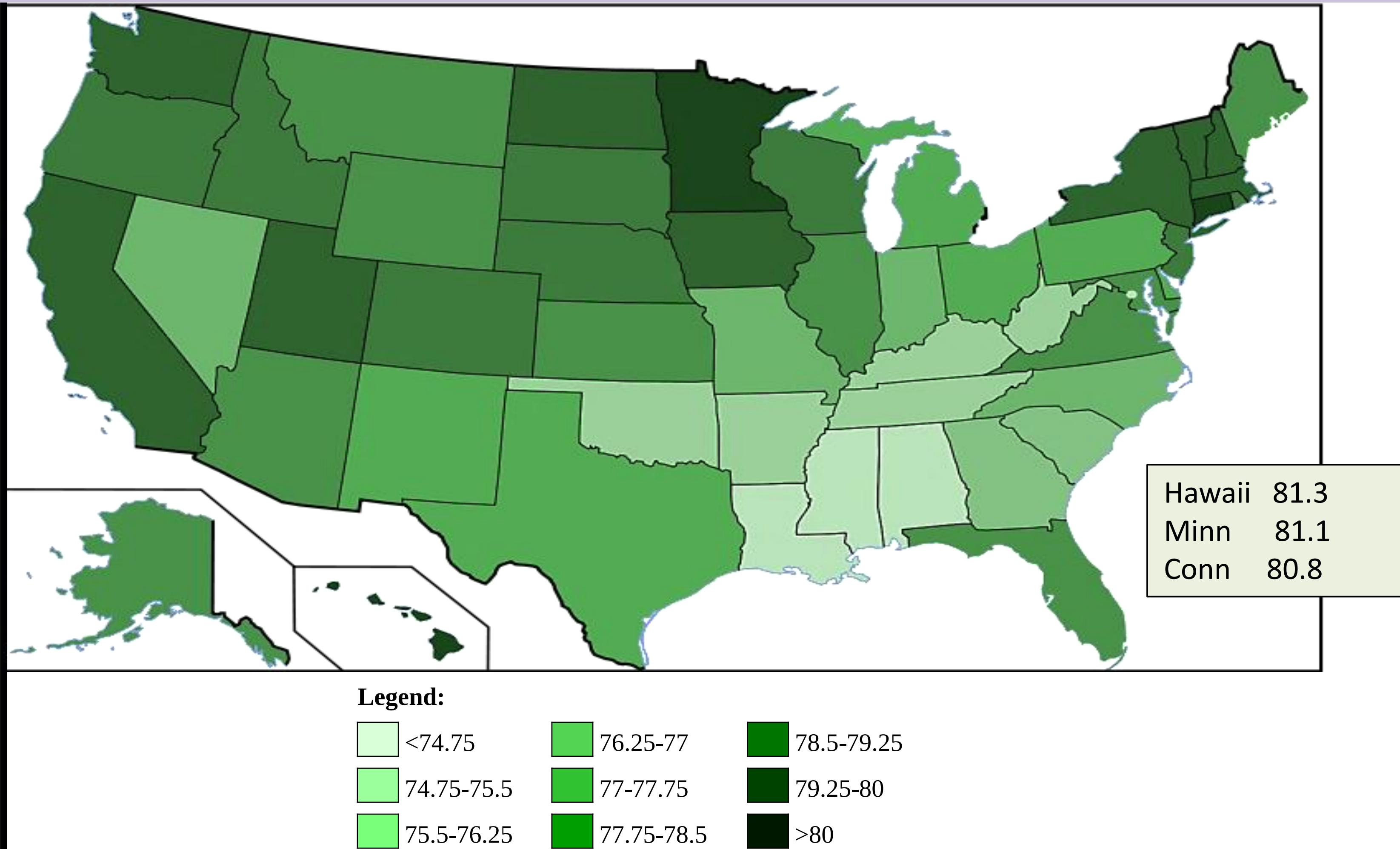
Recommendations: Mortality assumptions

- RP2014 mortality tables are recommended and adjusted to reflect Minnesota systems' specific member population experience.
- Minnesota one of the first states to use the new RP2014 tables. Tables assume mortality will continue to improve for future generations and therefore represent a conservative approach that recognizes higher costs in the future.

Why the big change?

- Average member life expectancy increased dramatically:
  - ✓ Age 65 female expected to live two years longer. For example, for TRA an age 65 female was expected to live to age 88.6 under the old mortality tables. That has increased to age 90.3 under the new RP2014 tables.

Geographic variations in life expectancy at birth



Source: American Human Development Report, from Cavanaugh Macdonald 8/19/15 presentation to TRA Board

Experience study: Cost impact on MSRS General Plan (actuarial value)

ACTUARIAL VALUE	7/1/14 valuation	7/1/15 valuation estimate (8% investment return + wage/salary growth assumption changes)	7/1/15 valuation estimate (mortality and all assumption changes)
Actuarial Accrued Liability	$12.4 billion	$13.1 billion	$13.8 billion
Actuarial Value of Assets	$10.3 billion	$11.2 billion	$11.2 billion
Funded Ratio	83%	85.7%	81.0%
Total Required Contribution as % of Pay	12.8%	12.4%	14.8%
Employee plus Employer Contributions	11.0%	11.0%	11.0%
Sufficiency / (Deficiency) as % of pay	(1.8%)	(1.4%)	(3.8%)

Experience study: Cost impact on MSRS General Plan (market value)

MARKET VALUE	7/1/14 valuation	7/1/15 valuation estimate (8% investment return + wage/salary growth assumption changes)	7/1/15 valuation estimate (mortality and all assumption changes)
Actuarial Accrued Liability	$12.4 billion	$13.1 billion	$13.8 billion
Market Value of Assets	$11.5 billion	$11.6 billion	$11.6 billion
Funded Ratio	92.4%	88.8%	83.9%
Total Required Contribution as % of Pay	10.0%	11.5%	13.8%
Employee plus Employer Contributions	11.0%	11.0%	11.0%
Sufficiency / (Deficiency) as % of pay	1.0%	(0.5%)	(2.8%)

Experience study: Cost impact on PERA General Plan (actuarial value)

ACTUARIAL VALUE	7/1/14 valuation	7/1/15 valuation estimate (8% investment return + wage/salary growth assumption changes)	7/1/15 valuation estimate (mortality and all assumption changes)
Actuarial Accrued Liability	$21.3 billion	$22.6 billion	$23.1 billion
Actuarial Value of Assets	$15.7 billion	$17.1 billion	$17.1 billion
Funded Ratio	73.5%	75.5%	73.8%
Total Required Contribution as % of Pay	15.8%	15.9%	16.4%
Employee plus Employer Contributions	13.8%	14.0%	14.0%
Sufficiency / (Deficiency) as % of pay	(2.0%)	(1.9%)	(2.4%)

Experience study: Cost impact on PERA General Plan (market value)

MARKET VALUE	7/1/14 valuation	7/1/15 valuation estimate (8% investment return + wage/salary growth assumption changes)	7/1/15 valuation estimate (mortality and all assumption changes)
Actuarial Accrued Liability	$21.3 billion	$22.6 billion	$23.1 billion
Market Value of Assets	$17.4 billion	$17.7 billion	$17.7 billion
Funded Ratio	81.8%	78.2%	76.4%
Total Required Contribution as % of Pay	13.2%	15.0%	15.6%
Employee plus Employer Contributions	13.8%	14.0%	14.0%
Sufficiency / (Deficiency) as % of pay	(0.6%)	(1.0%)	(1.6%)

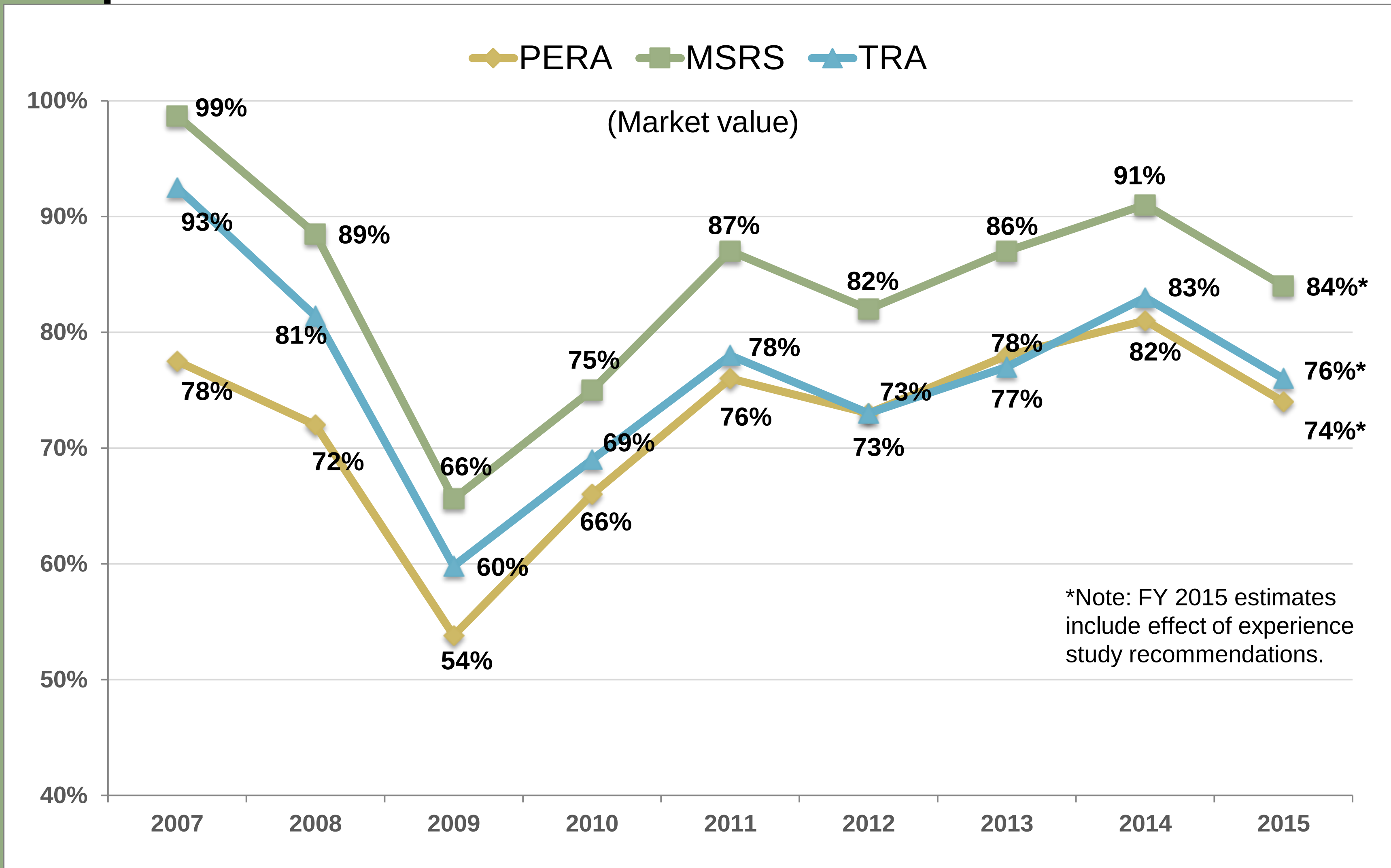
Experience study:
Cost impact on TRA (actuarial value)

ACTUARIAL VALUE	7/1/14 valuation	7/1/15 valuation estimate (no assumption changes)	FY2015 estimate with all assumption changes (8% investment return, mortality, etc.)
Actuarial Accrued Liability	$24.5 billion	$24.9 billion	$26.6 billion
Actuarial Value of Assets	$18.2 billion	$19.5 billion	$19.5 billion
Funded Ratio	74.1%	78.1%	73.2%
Total Required Contribution as % of Pay	19.15%	17.54%	20.97%
Employee plus Employer Contributions	15.68%	15.66%	15.66%
Sufficiency / (Deficiency) as % of pay	(3.47%)	(1.88%)	(5.31%)

Experience study:
Cost impact on TRA (market value)

MARKET VALUE	7/1/14 valuation	7/1/15 valuation estimate (no assumption changes)	FY2015 estimate with all assumption changes (8% investment return, mortality, etc.)
Actuarial Accrued Liability	$24.5 billion	$24.9 billion	$26.6 billion
Market Value of Assets	$20.3 billion	$20.2 billion	$20.2 billion
Funded Ratio	82.7%	81.0%	75.9%
Total Required Contribution as % of Pay	15.75%	16.37%	19.87%
Employee plus Employer Contributions	15.68%	15.66%	15.66%
Sufficiency / (Deficiency) as % of pay	(0.07%)	(0.70%)	(4.21%)

Funding: Impact of assumption changes



Next steps

Retirement systems' boards are exploring sustainability packages.

- Funds are working with stakeholder groups (retirees, actives, employers).
- Analyzing all options – contributions, COLAs, other benefit changes.

Financial goal: Develop proposal that will address deficiencies and improve funded ratios.

- Part of regular fiduciary responsibilities to review and course-correct when necessary.
- Routine evaluation to ensure assumptions are reasonable.
- Regular part of ensuring funds are accurately reflecting their member demographics and future costs.

Next steps

- Retirement system boards have reviewed economic and demographic assumption changes and have forwarded experience study findings and recommendations to LCPR.
- The retirement systems request timely LCPR review and approval in order to incorporate the changes into their 2016 valuation reports.

Minnesota: Unlike other states

- **Disciplined funding**. Problems are corrected as they occur, with positive effect on state's bond rating.
- **Proactive pension reforms**. 2010-2013 sustainability legislation was critical, cost savings: $1.75 billion (TRA), $6.44 billion (all Minnesota systems).
- **Modest benefits**. The average pension for PERA is $1,100/month; for MSRS, $1,600/month; Minnesota teachers, $2,200. Minnesota pension systems moved to a very high (age 66) normal retirement age over 24 years ago which has lowered costs.
- **Employees contribute half** the cost in Minnesota. Many other states have low – or no – employee contributions.
- **Employer contributions** in Minnesota are 2 percent of state and local government spending, compared to 3.7 percent in other states. (Census Bureau)