# Minnesota Legislative Commission on Pensions and Retirement

**Pensions 101**

January 31, 2017

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# Agenda

- Role of LCPR’s Consulting Actuary
- Actuarial Valuation Process
- Status of Current Minnesota Retirement Systems
- Public Sector Pension Landscape

# Role of LCPR’s Consulting Actuary

# Contracted Actuary for the Commission
## 2017 Role and Responsibilities

- Deloitte Consulting has an actuarial consulting contract with the LCPR for Fiscal Years 2015 – 2019.
- In the past we have completed:
  - July 1, 2014 valuation replication of MSRS – General Plan
  - July 1, 2015 valuation replication of PERA – General Plan
  - Review of 2008 – 2014 Actuarial Experience Studies
  - Review of the State's Standards for Actuarial Work
  - Combined Service Annuity experience study
  - Several presentations to the LCPR and its executive management
- During Fiscal Year 2017 we will complete:
  - Review of Optional Annuity Form factors and Early Retirement Reduction factors for MSRS (completed)
  - Review of Investment Rate of Return assumption recommendations made by the plans' actuaries (completed)
  - Replication of July 1, 2016 valuation for the Teachers Retirement Association (Due February 28, 2017)
  - Review the July 1, 2016 actuarial valuations of statewide and major local Minnesota public retirement plans (Due February 28, 2017)
  - Other analysis or education as requested by the LCPR

# Actuarial Valuation Process

# Defined Benefit (DB) vs. Defined Contribution (DC)

- Fundamental Differences in Retirement Plan Design

| | Defined Benefit | Defined Contribution |
|---|---|---|
| **Employer Promise** | Monthly benefit payable for the life of a participant (or joint life of a member and spouse) at retirement | Annual contributions to members' accounts |
| **What is Unknown** | Ultimate cost of the plan (investment risk/reward is borne by the employer) | Ultimate benefits (investment risk/reward is borne by the employee) |

# Why We Perform Actuarial Valuations

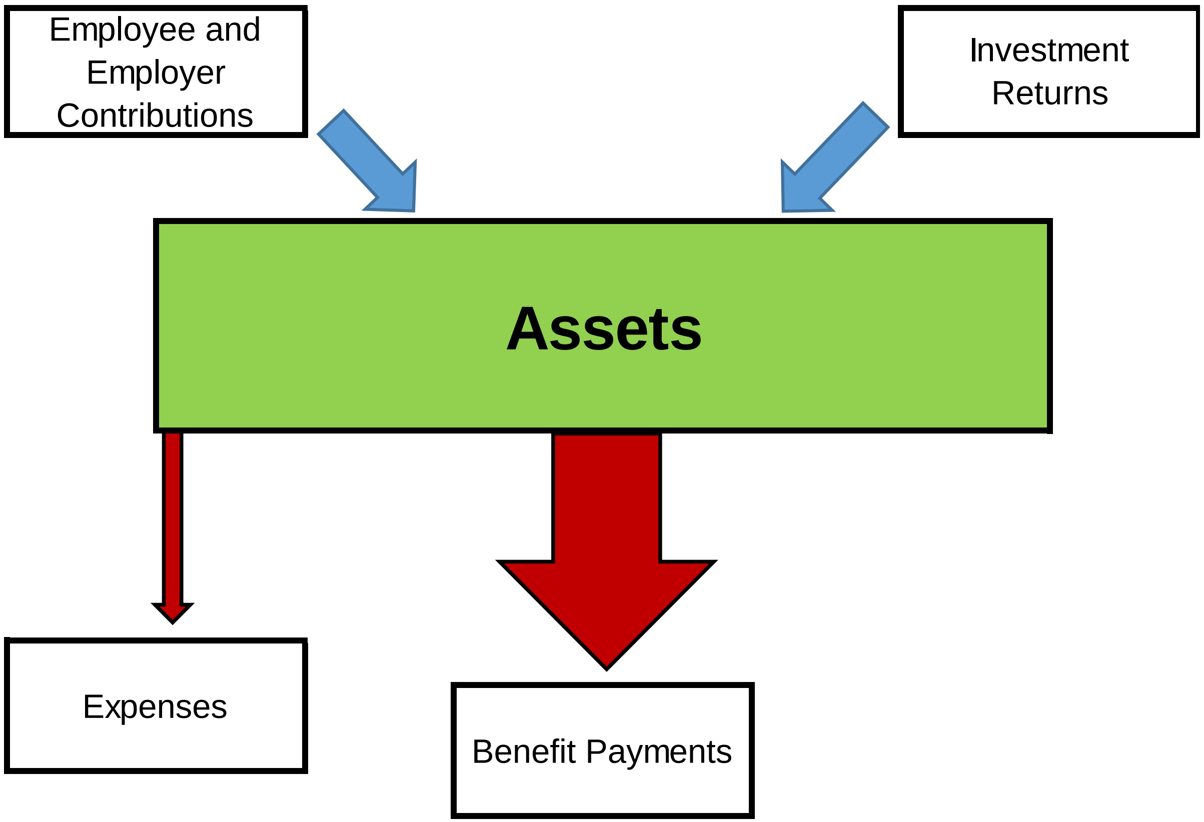
- Measure plan assets, liabilities and funding progress

- Estimate the long-term cost of the pension plan

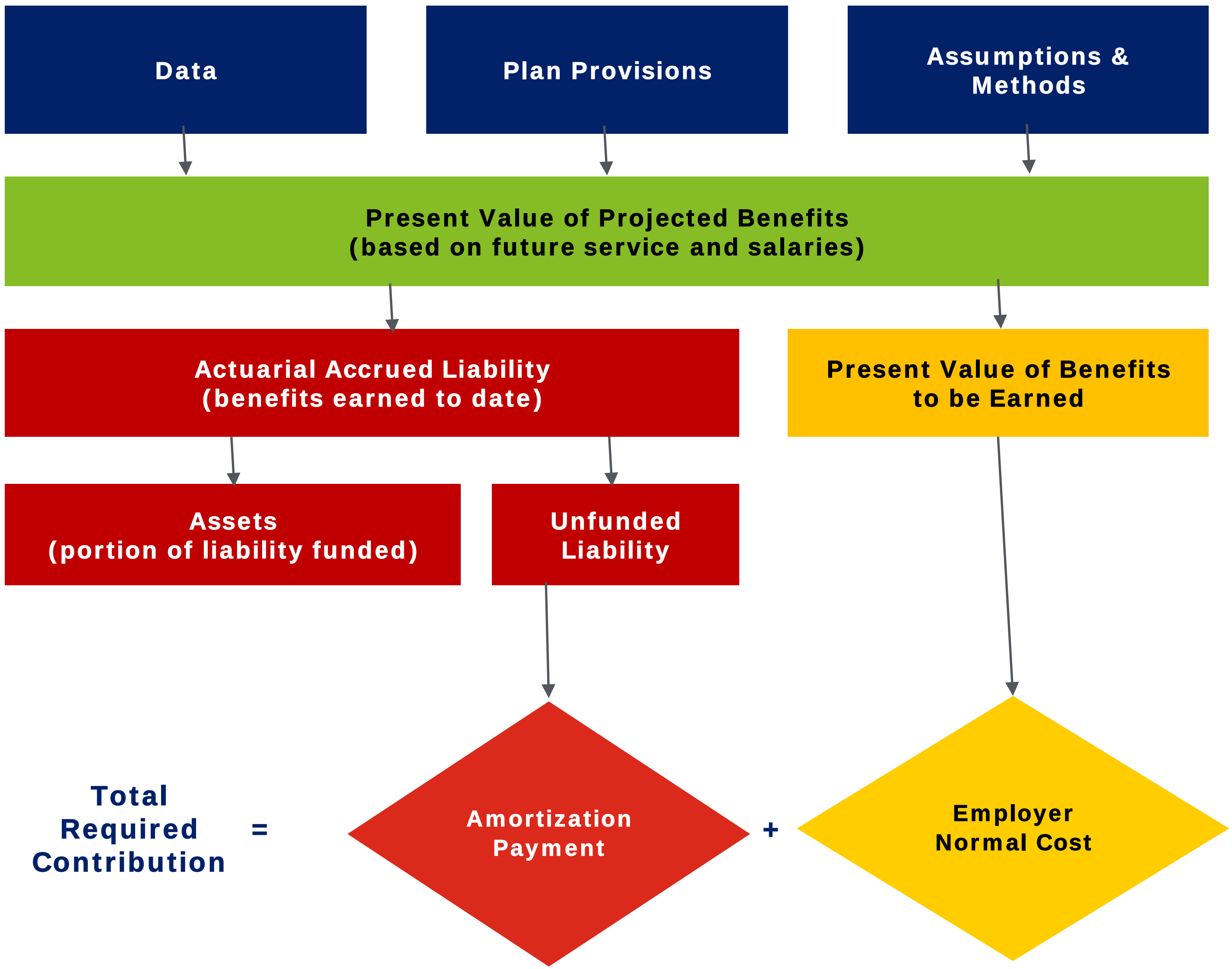
- Calculate the contributions needed to fund benefits
  - Compare required contribution to those established by state statute

# Pension Plan Balance Equation

**Contributions + Investments = Benefit Payments + Expenses**



# Valuation Process – How the Contribution is Determined



# Status of Current Minnesota Retirement Systems

# Actuarial Assumptions

| Economic Assumptions | MSRS General | PERA General | TRA | SPTRFA |
|---|---|---|---|---|
| Investment Rate of Return | 8.00% | 8.00% | FYE 2017: 8.00%<br>FYE 2018+: 8.50% | 8.00% |
| Post-Retirement Increases (COLA's) | 2.00% | Pre-2053: 1.00%<br>Pst-2052: 2.50% | 2.00% | Pre-2055: 1.00%<br>2055 - 2065: 2.00%<br>2066+: 2.50% |
| Inflation | 2.75% | 2.75% | 2.75% | 3.00% |
| Payroll Growth | 3.50% | 3.50% | 3.50% | 4.00% |
| Salary Scale | Varies | Varies | Varies | Varies |

| Demographic Assumptions | MSRS General | PERA General | TRA | SPTRFA |
|---|---|---|---|---|
| Mortality | Base: RP-2014<br>Proj: RP-2015<br>(with adjustments) | Base: RP-2014<br>Proj: RP-2015<br>(with adjustments) | Base: RP-2014<br>Proj: RP-2015<br>(with adjustments) | Base: RP-2000<br>Proj: Scale AA to 2020<br>(with adjustments) |
| Retirement | Experience-based | Experience-based | Experience-based | Experience-based |
| Withdrawal | Experience-based | Experience-based | Experience-based | Experience-based |
| Disability | Experience-based | Experience-based | Experience-based | Experience-based |

Assumptions above are analyzed every 4-6 years through experience studies performed by each plans' retained actuary. The last cycle for the three largest plans was a 2008-2014 Experience Study. SPTRFA's most recent experience study was completed for the period 2006 – 2011.

*Source: July 1, 2016 valuation reports.*

# Actuarial Methods

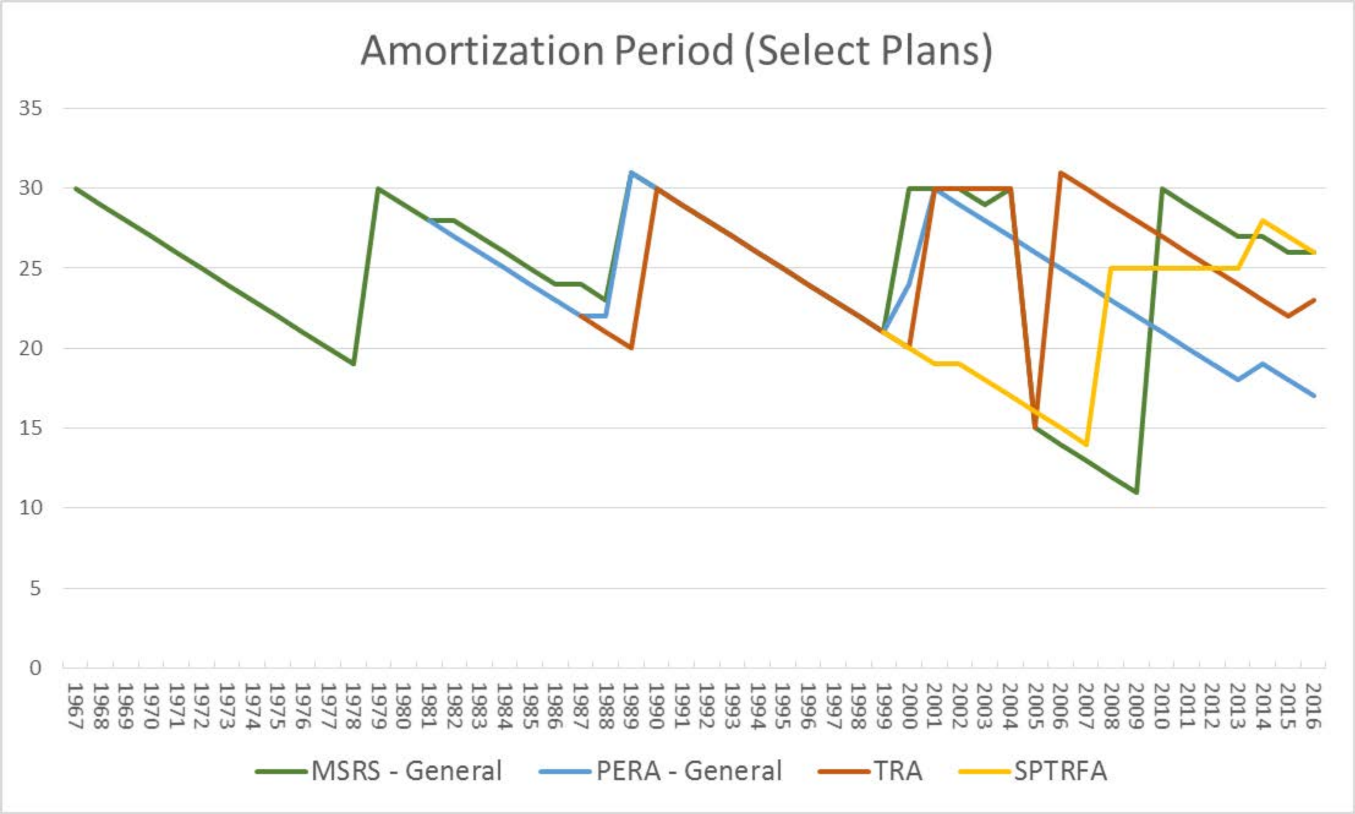
- Contribution Rate Setting
  - Contribution rates are set in state statute
  - No connection between the actuarial required contribution determine by the actuary and the contribution that is required by state statute

- Actuarial Cost Method
  - Entry Age Normal % of Pay cost method
    - Normal Cost (as a % of payroll) should be level over a member's working lifetime
    - This method is also required by GASB 67/68

- Asset Smoothing
  - 5-year smoothing of asset gains/(losses) above or below assumed rate of return
    - Limits fluctuations in required contribution amounts

# Actuarial Methods (continued)

- Amortization of Unfunded Liability
  - Single closed amortization as a percent of pay
    - Target date adjusted for assumption and plan provision changes
    - Target date can also be adjusted by state statute




*Source: Historical and Summary Data from http://www.commissions.leg.state.mn.us/*

# July 1, 2016 Overview
## All Plan Overview (in millions)

| | MSRS General | PERA General | TRA* | SPTRFA | All Other Plans | TOTAL |
|---|---|---|---|---|---|---|
| Actuarial Value of Assets | $ 11,676 | $ 18,766 | $ 20,194 | $ 1,008 | $ 9,680 | $ 61,324 |
| Actuarial Accrued Liability | 14,317 | 24,848 | 28,174 | 1,593 | 11,647 | 80,579 |
| **Unfunded AAL** | **$ 2,641** | **$ 6,082** | **$ 7,980** | **$ 585** | **$ 1,967** | **$ 19,255** |
| AVA Funded Ratio | 81.6% | 75.5% | 71.7% | 63.3% * | 83.1% | 76.1% |
| Covered Payroll | $ 2,889 | $ 5,907 | $ 4,859 | $ 272 | $ 1,488 | $ 15,415 |
| Annual Contribution EE | $ 159 | $ 384 | $ 364 | $ 20 | $ 148 | $ 1,075 |
| Annual Contribution ER | 159 | 443 | 374 | 27 | 225 | 1,228 |
| Additional Contributions | - | 37 | 36 | 11 | 27 | 111 |
| **Total Contribution** | **$ 318** | **$ 864** | **$ 774** | **$ 58** | **$ 400** | **$ 2,414** |
| Normal Cost | $ 237 | $ 449 | $ 485 | $ 24 | $ 284 | $ 1,479 |
| Amortization of Unfunded | 171 | 513 | 542 | 36 | 144 | 1,406 |
| Expenses | 11 | 12 | 11 | 1 | 3 | 38 |
| **Required Contribution** | **$ 419** | **$ 974** | **$ 1,038** | **$ 61** | **$ 431** | **$ 2,923** |
| **Contribution Sufficiency/(Deficiency)** | **$ (101)** | **$ (110)** | **$ (264)** | **$ (3)** | **$ (31)** | **$ (509)** |
| Investment Return | 8.00% | 8.00% | 8.00% | 8.00% | Varies | |

** July 1, 2016 assumed investment return was 8.47% for TRA, results shown at 8.00% for comparison purposes.*

*Source: July 1, 2016 valuation reports.*

# July 1, 2016 Overview

## Select Plan Deep Dive

| Funded Status | MSRS General | PERA General | TRA* | SPTRFA |
|---|---|---|---|---|
| Accrued Liability Funded Ratio (AVA) | 81.6% | 75.5% | 71.7% | 63.3% |
| Accrued Liability Funded Ratio (MVA) | 78.4% | 72.4% | 68.9% | 60.3% |
| **Funding Policy** | **MSRS General** | **PERA General** | **TRA*** | **SPTRFA** |
| **Required Contribution** | | | | |
| Normal Cost Rate | 8.2% | 7.6% | 10.0% | 8.9% |
| Supplemental Contribution Rate | 5.9% | 8.7% | 11.2% | 13.3% |
| Allowance for Expenses | 0.4% | 0.2% | 0.2% | 0.3% |
| Total | 14.5% | 16.5% | 21.4% | 22.4% |
| **Statutory Contribution** | | | | |
| Employee | 5.5% | 6.5% | 7.5% | 7.5% |
| Employer** | 5.5% | 7.5% | 7.7% | 10.1% |
| Additional*** | 0.0% | 0.6% | 0.7% | 3.9% |
| Total | 11.0% | 14.6% | 15.9% | 21.5% |
| **Sufficiency / (Deficiency)** | **(3.5%)** | **(1.9%)** | **(5.5%)** | **(0.9%)** |
| **Amortization Period** | **26 years** | **17 years** | **24 years** | **26 years** |
| **Plan Provisions** | **MSRS General** | **PERA General** | **TRA*** | **SPTRFA** |
| Multiplier for New Hires | 1.7% | 1.7% | 1.9% | 1.9% |
| Current COLA | 2.0% | 1.0% | 2.0% | 1.0% |

* July 1, 2016 investment return assumption was 8.47% for TRA, shown at 8.00% for comparison purposes.

**SPTRFA Employer Contribution will increase to 10.3% on 7/1/2017

***Additional contributions made by the City of Minneapolis (PERA) or the State

*Source: July 1, 2016 valuation reports.*

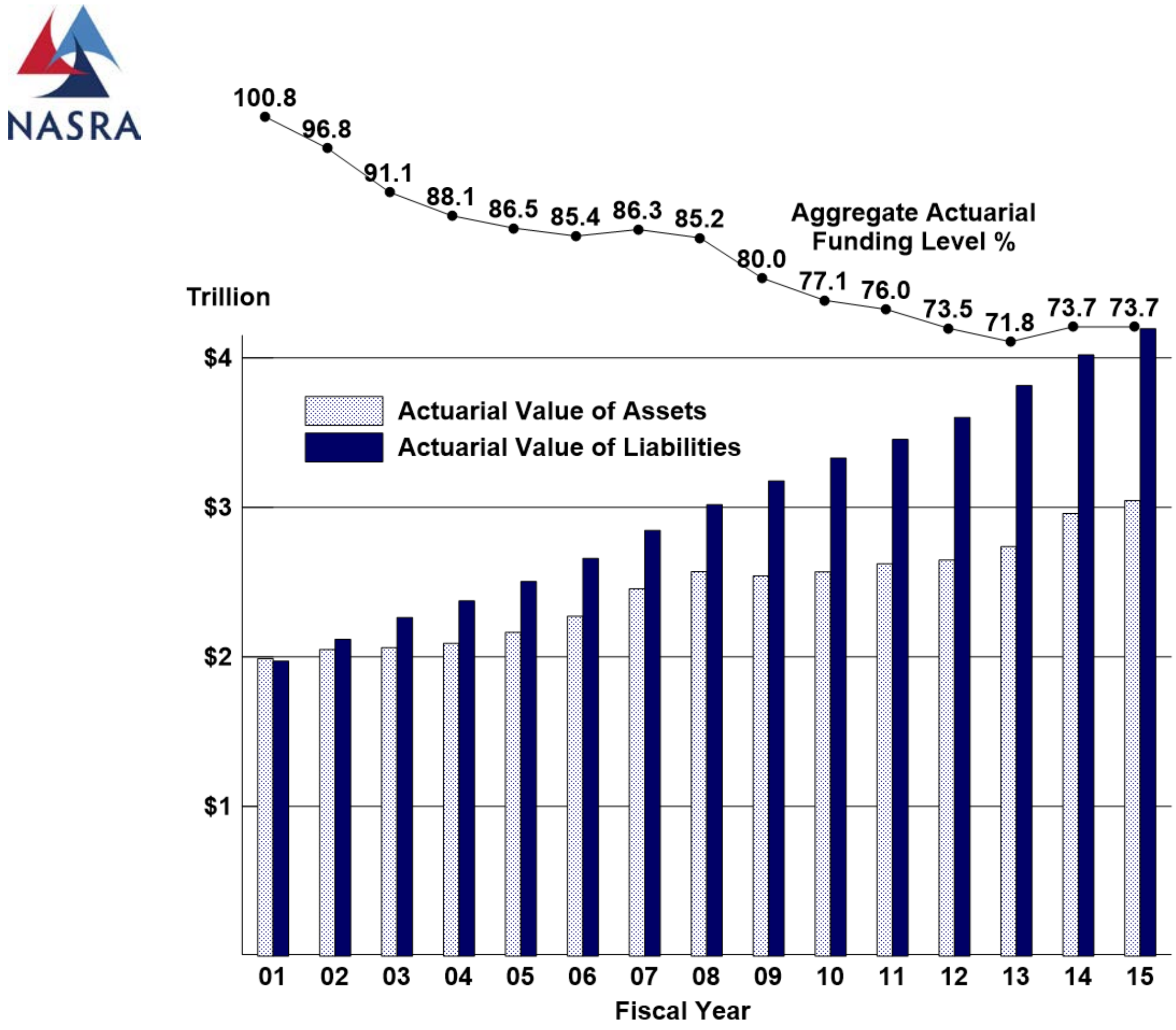
# July 1, 2016 – Select Plan Cashflow and Investment Experience

| | MSRS General | PERA General | TRA | SPTRFA |
|---|---|---|---|---|
| **Fiscal Year Ending 2016** | | | | |
| Contributions | $305M | $841M | $740M | $56M |
| Benefit Payments & Expenses | $731M | $1,408M | $1,739M | $113M |
| Net | ($426M) | ($567M) | ($999M) | ($57M) |
| | | | | |
| Net Investment Returns | ($10M) | ($21M) | ($36M) | ($1M) |
| Expected Investment Returns | $915M | $1,464M | $1,596M | $79M |
| Gain / (Loss) | ($925M) | ($1,485M) | ($1,632M) | ($80M) |

*Source: July 1, 2016 valuation reports.*

# Public Sector Pension Landscape

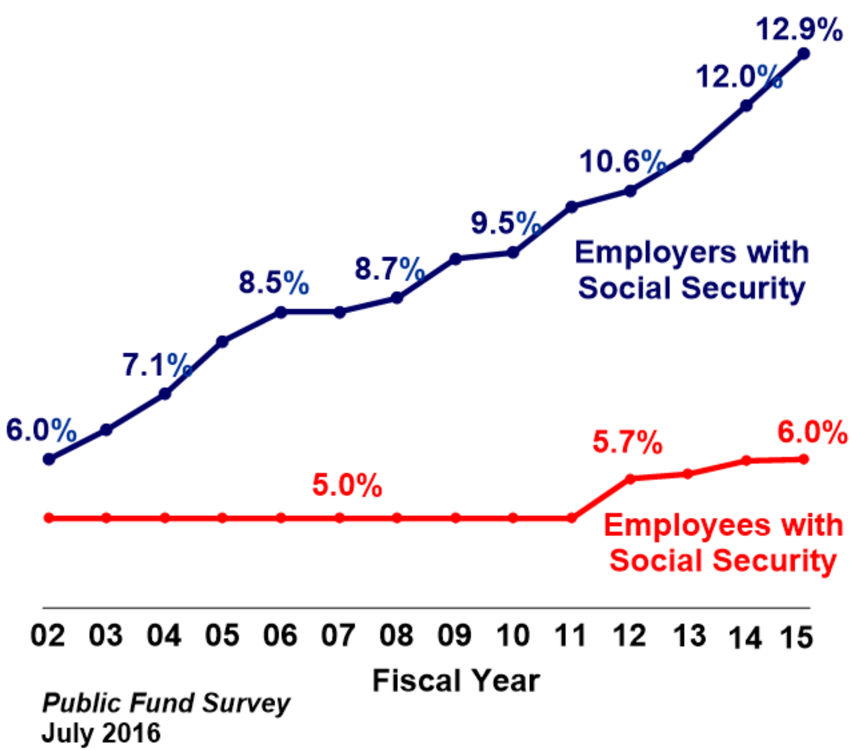
# National Public Sector Pension Plans – Funding Ratio

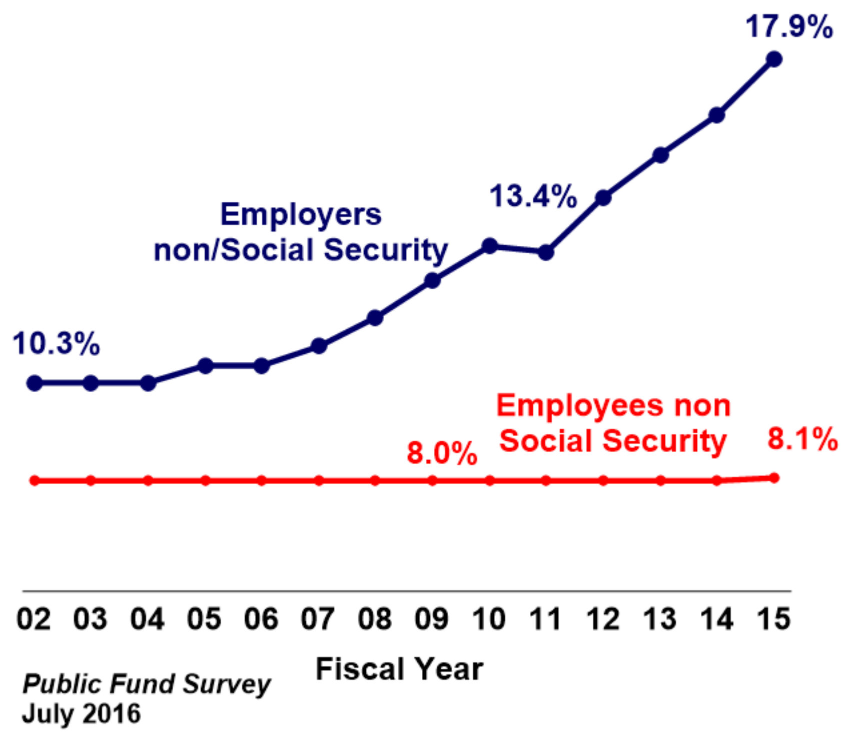



**Aggregate Public Pension Funding Level, FY 01 to FY15**

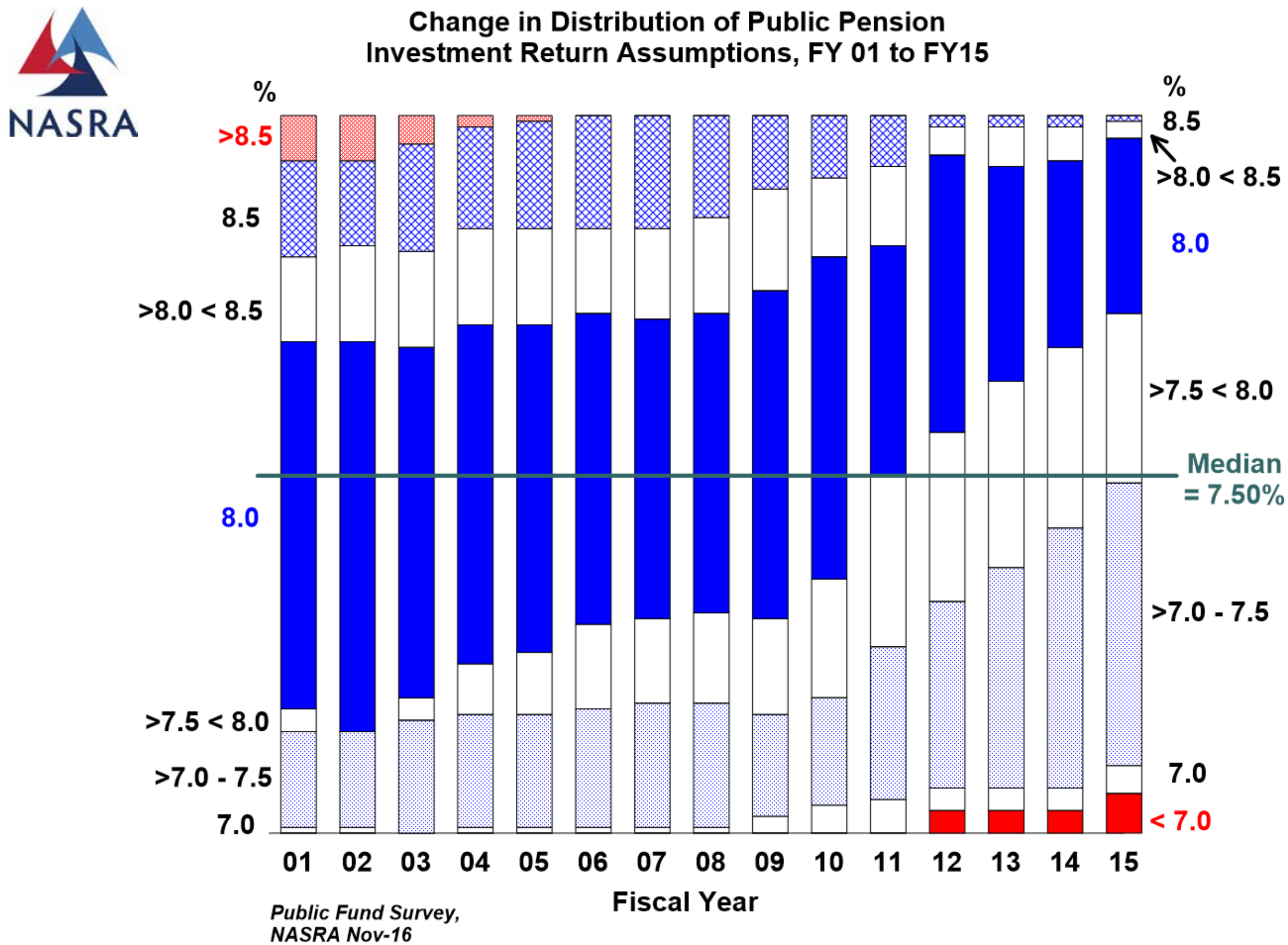
# National Public Sector Pension Plans – Contribution Rates

## Median Contribution Rates, Social Security-eligible and –ineligible, FY 02 to FY15



# National Public Sector Pension Plans – Investment Return Assumptions




**CalPERS reduced its investment return assumption from 7.5% to 7.0% on December 20th 2016**

# July 1, 2017 Recommended Investment Return Assumptions - Deloitte's Review

The largest retirement plans (MSRS – General, PERA – General and TRA) have proposed changes in their investment return assumption beginning July 1, 2017. This assumption is used to discount projected benefit payments and is among the most significant actuarial assumptions. A summary of the proposed changes is below:

| System | Actual July 1, 2016 | | Proposed July 1, 2017 | |
|---|---|---|---|---|
| | FYE17 | FYE18+ | FYE18 - FYE22 | FYE23+ |
| Minnesota State Retirement System (MSRS) | 8.00% | 8.00% | 7.50% | 7.50% |
| Public Employees Retirement Association (PERA) | 8.00% | 8.00% | 7.50% | 7.50% |
| Teachers Retirement Association (TRA) | 8.00% | 8.50% | 7.50% | 8.00% |

## Our review noted the following:

- Recent experience studies performed for the above three plans supports the proposed investment return assumptions.
- Shifting to a more conservative investment return assumption increases actuarially determined contributions in the near-term; however, it reduces contribution rate risk and insolvency risk.
- The highly publicized national trend among other statewide retirement systems across the country has been to decrease this assumption. However, long-term capital market expectations based on a survey of investment firms has shown improvement over the last year.
- Aligning this assumption across Minnesota retirement systems could provide a significant public benefit, assuming the funds across the systems are invested consistently.

# Funding Policies

- **Funding policies determine the amount contributed by the employer and participating employees**
- The amount contributed by employees and employers will vary depending on:
  - Distribution of funding burden between employee and employer
  - Method used to amortize unfunded liabilities and future actuarial gains and losses.
  - Actuarial cost method used to determine normal cost.
- **Entities have recently weighed in on best practices in Public Sector Funding Policy**
  - Society of Actuaries Blue Ribbon Panel
  - Government Finance Officers Association
  - "Big 7" State and Local government associations
  - California Actuarial Advisory Panel
  - American Academy of Actuaries
- **Areas of Agreement**
  - Benefit Security and Adequacy
  - Intergenerational Equity
  - Contribution Stability
  - Transparency

# Current GASB Standards

- **GASB No. 68 replaces GASB No. 27 (Entity reporting)**
- Net pension liability (Unfunded liability) is now on balance sheet
- Assets are reported at Fair Value
- A single actuarial method is required — Entry Age Normal
- New discount rate setting methodology
  - Unfunded plans — use municipal bond index
  - Funded plans — use blend of Expected Return on Assets and municipal bond index
  - Since municipal bond yields are low, some funded plans will have to use lower discount rates (which produce higher unfunded liabilities)

- **GASB No. 67 replaces GASB No. 25 (Plan reporting)**
- New disclosure requirements for both financial statements and Required Supplementary Information
- Cost-Sharing Employers
  - Will now generally be required to recognize a liability for its proportionate share of the net pension liability

# July 1, 2016 – GASB 67/68 Reporting (millions)

| | MSRS General | PERA General | TRA | SPTRFA |
|---|---|---|---|---|
| **GASB 67/68 Reporting Information** | | | | |
| Total Pension Liability | $23,622 | $26,114 | $43,277 | $1,593 |
| Plan Fiduciary Net Position | $11,223 | $17,995 | $19,424 | $960 |
| Net Pension Liability | $12,399 | $8,119 | $23,852 | $633 |
| Percentage Funded | 47.5% | 68.9% | 44.9% | 60.3% |
| Net Pension Liability as a Percent of Payroll | 443.2% | 140.6% | 528.2% | 244.6% |
| | | | | |
| Long-Term Expected Investment Return | 7.50% | 7.50% | 8.00% | 8.00% |
| Long-Term Municipal Bond Rate | 2.85% | 2.85% | 3.01% | 2.85% |
| Single Discount Rate | 4.17% | 7.50% | 4.66% | 8.00% |
| | | | | |
| Last FYE Benefit Payments are 100% Funded | 2042 | N/A | 2051 | N/A |

*Source: July 1, 2016 GASB 67/68 reports.*

# Bond Rating Agencies

S&P, Moody's and Fitch each use unique methodologies and assumptions when evaluating the impact of an entity's pension liability on their overall rating. S&P recently released updated information on their methodology, briefly summarized below:

**S&P Methodology**

Regarding pension liabilities, the focus is on funding progress trends, specifically:

1. Three-year average of funded ratio
2. Unfunded Pension Liability
3. Pension Funding Discipline

Positive Factors that could improve funding discipline score (the opposite of which could negatively impact):

- Closed/fixed level dollar amortization period of <20 years
- Long-term return assumption well below 5-year average rate of return
- Active to beneficiary ratio above median with high funded ratio
- Plan contribution assumptions for future fully funded date are in line with track record and commitment to funding.
- Experience studies at least every 5 years and incorporate on industry standards

# Q & A

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