Firefighters' and Rescue Squad Workers' Pension Fund

State Contribution Rate Stabilization Policy

October 27, 2016

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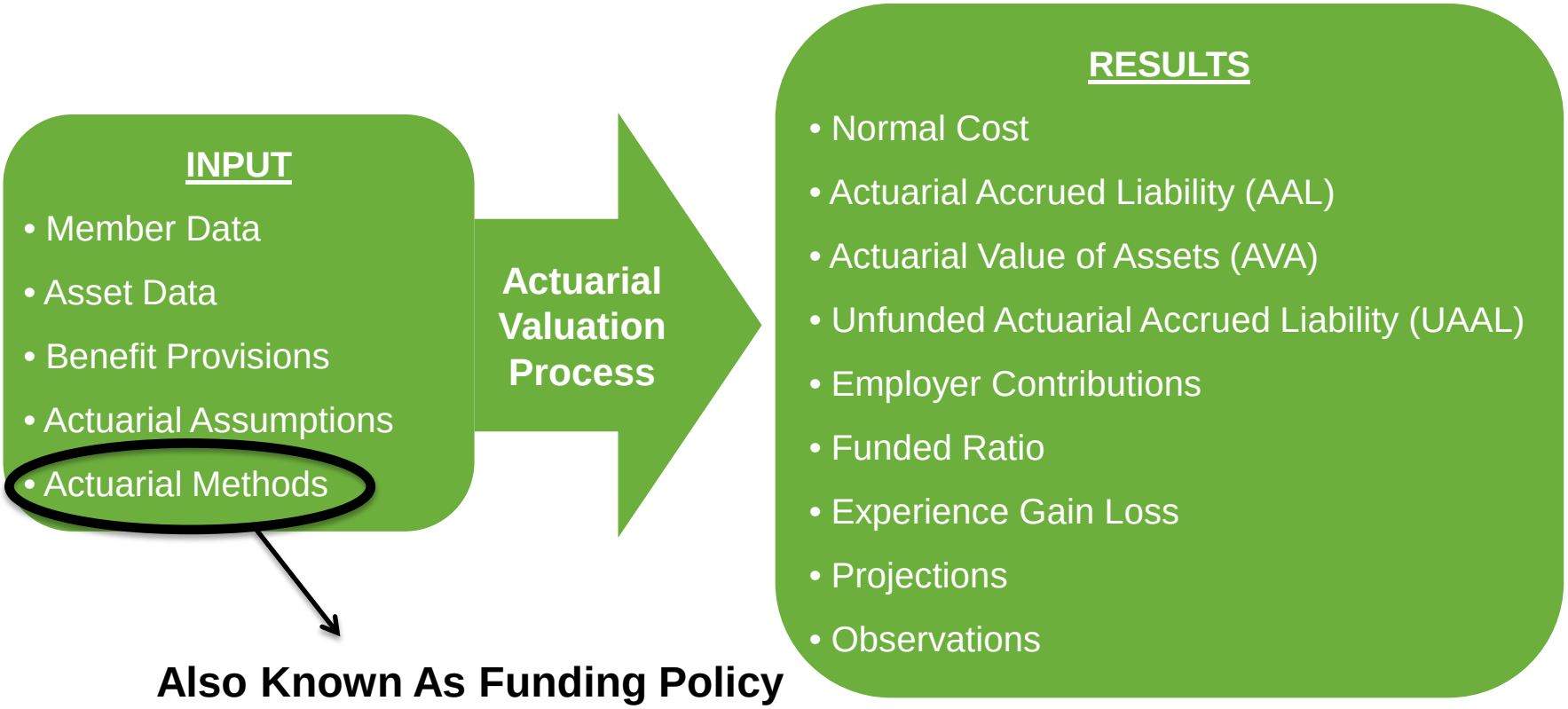
Agenda

- Actuarial 101 review
- Current Funding Policy Landscape
- Proposed Employer Contribution Rate Stabilization Policy

Purpose of the Annual Actuarial Valuation

- Each year, the actuary determines the amount of contributions to be made to the Retirement System during each member's career, which, when combined with investment return, will be sufficient to pay for retiree benefits
- This contribution is determined through the annual actuarial valuation, which is summarized in the annual actuarial valuation report
- In addition, the annual actuarial valuation is performed to
  - Determine progress on funding the Retirement Systems
  - Explore why the results of the current valuation differ from the result of the valuation of the previous year
  - Satisfy regulatory and accounting requirements

Actuarial Valuation Process



Also Known As Funding Policy

Actuarial Methods

Actuarial Methods describe the funding policy for the Retirement System. Actuarial Methods generally are comprised of the three components below:

- Actuarial Cost Methods: allocate costs to the past, current and future to allow for systematic payment of the costs over a member's career
- Amortization Payment for UAAL Methods: determine the payment schedule for unfunded actuarial accrued liability
- Asset Valuation Methods: smooth or average the market value returns over time to alleviate contribution volatility that results from market returns that differ from the investment return assumption used in the actuarial valuation

Actuarial methods allow for a considerable amount of flexibility in paying the costs of a Retirement System. The funding policy selected by the Retirement Board should strike a balance between contributions that are stable from year to year but satisfy the actuarial needs of the Retirement System.

Funding Policy

There are four broad considerations when establishing a funding policy for a pension plan

- Sufficiency - The funding target should be the value of benefits accrued to date
- Intergenerational equity – taxpayers should pay for workers' pensions while those workers are providing their services – fund for benefits over the worker's career.
- Stability of contributions – while stable contributions are easy to budget for, stability should not be achieved at the expense of the first two
- Accountability and transparency – each component of the funding policy should be clear on the intent and effect

Funding Policy

- There is no mandated funding policy within the public sector
- For years, the accounting standards under GASB 25 and 27 served as the de facto funding policy of public plans
  - Pay for the cost of benefits accruing
  - Pay off the pension debt over a perpetual period of 30 years of less
- After the passing of the GASB 25 and 27 standards, useful papers on this topic were issued
  - These working papers are not binding
  - See the appendix for links to some of these working papers

Funding Policy

The current Actuarial Methods used to develop contributions for the North Carolina Retirement Systems (NCRS) are well within the recommendations contained in these working papers

- Actuarial Cost Method: most NCRS systems apply entry age normal, which has been and continues to be the public sector retirement system gold standard
- Method of Amortizing Payment of Unfunded Actuarial Accrued Liability (UAAL): most NCRS systems pay down the UAAL in 12 years – a shorter period than the 15 to 20 year period indicated in these working papers
- Asset Valuation Methods: Asset returns in excess of or less than the expected return on market value of assets reflected over a five-year period.
  - Assets not greater than 120% of market value and not less than 80% of market value
  - Adheres to recommended practice and helps alleviate contribution volatility

More importantly, North Carolina policymakers have consistently approved the contributions recommended by the actuaries since inception, resulting in one of the best funded public systems in the country

Funding Policy of the FRSWPF

- Actuarial Cost Methods allocate costs to the actuarial accrued liability (i.e. the amount of money that should be in the fund) for past service and normal cost (i.e. the cost of benefits accruing during the year) for current service.
  - The Board of Trustees has adopted Entry Age Normal as its actuarial cost method
  - Develops costs that stay level
- Asset Valuation Methods smooth or average the market value returns over time to alleviate contribution volatility that results from market returns.
  - Asset returns in excess of or less than the expected return on market value of assets reflected over a five-year period.
  - Assets corridor: not greater than 120% of market value and not less than 80% of market value
- Amortization Methods determine the payment schedule for unfunded actuarial accrued liability (i.e. the difference between the actuarial accrued liability and actuarial value of assets)
  - Payment level: the payment is determined as a level dollar amount, similar to a mortgage payment
  - Payment period: a 12-year closed amortization period was adopted for fiscal year ending 2012. A new amortization base is created each year based on the prior years' experience.

Funding Policy

- This is all good news – right? Well…
- All else being equal, year to year contribution volatility is higher for North Carolina Retirement Systems
  - Missing the assumed rate of return of 7.25% by just 1.00% increases the contribution by $0.1 million in year 1, accumulating to $0.6 million over five years as the difference is reflected in the contribution rates
- Additionally, increases in benefit amounts increase the Plan's unfunded actuarial accrued liability if the cost is amortized under the Plan's funding policy.
  - Paying for the entire cost of benefit increases in the year they are granted will help prevent the creation of the unfunded liability
- Recent benefit increases have been granted without an increase in member contributions resulting in members paying for less than half the cost of the benefits

State Contribution Rate Stabilization Policy

- In order to promote security of benefits and stabilize the employer contribution rate, a policy of making employer contributions greater than the actuarially determined contribution could be established
- Session Law 2016-108 requires that the Board develop a State Contribution Rate Stabilization Policy (SCRSP) for the FRSWPF
- The appropriated state contribution for fiscal year ending 2017 is $17.6 million
- The preliminary actuarially determined contribution for fiscal year ending 2018 (based on the December 31, 2015 valuation) is $14.3 million
  - Reflects the final return to service assumption, which reduced the contribution by $3.7 million
- The projections in this presentation demonstrate one example of a State Contribution Rate Stabilization Policy the Board could consider, which is comprised of three parts:
  - State Contributions
  - Benefit Increases
  - Member Contribution Increases

State Contribution Rate Stabilization Policy: State Contribution

- This example sets the recommended state contribution to $17.95 million for fiscal year ending 2018 (which is equal to the appropriation for fiscal year ending 2017 plus $350,000)
- The recommended state contribution in any given fiscal year is the greater of:
  1. The prior year's appropriated contribution plus $350,000 (roughly a 2% annual increase of the current $17.6 million appropriation, which mirrors expected 2% growth in gross premium tax receipts on homeowners insurance which partially funds the Fund); and
  2. The actuarially determined contribution

State Contribution Rate Stabilization Policy: Benefit Amount Increases

- This example also provides a methodology where benefit increases could be considered in periods of sustained investment gains.
- A benefit amount increase will be considered when the Fund has an actuarial value of asset gain at the valuation date AND the Fund's deferred asset gains (to be recognized in future years) exceed the Fund's deferred asset losses
  - The benefit amount increase will be set such that the increase in the actuarially accrued liability is less than or equal to the asset gain for that year.
  - The increase will not be greater than the increase in CPI in the prior year.
  - The benefit amount increase will be effective a year and a half after the valuation date.

State Contribution Rate Stabilization Policy: Benefit Amount Increases

		Valuation Results 12/31/2015	Estimate at 12/31/2018	Estimate at 12/31/2019
(a)	Beginning of Year Market Value of Assets (MVA)	$ 383,327,980	$ 415,163,000	$ 449,932,000
(b)	Contributions	16,727,357	20,968,000	21,318,000
(c)	Benefit Payments	(28,816,779)	(31,299,000)	(32,138,000)
(d)	Net Cash Flow	(12,089,422)	(10,331,000)	(10,820,000)
(e)	Expected Investment Return [7.25% * (a) + 3.625% * (d)]	27,353,037	29,725,000	32,228,000
(f)	Expected End of Year Market Value of Assets [(a) + (d) + (e)]	398,591,595	434,557,000	471,340,000
(g)	End of Year Market Value of Assets	372,572,223	449,932,000	505,790,000
(h)	Excess of Market Value over Expected Market Value of Assets [(g) - (f)]	(26,019,372)	15,375,000	34,450,000
	80% of Current Year Asset Gain/(Loss)	(20,815,498)	12,300,000	27,560,000
	60% of Asset Gain/(Loss) from Last Year	N/A	6,299,000	9,225,000
	40% of Asset Gain/(Loss) from Two Years Ago	N/A	(73,000)	4,199,000
	20% of Asset Gain/(Loss) from Three Years Ago	N/A	(5,204,000)	(37,000)
(i)	Total Deferred Asset Gain/(Loss)	(20,815,498) ✗	13,322,000 ✓	40,947,000 ✓
(j)	Preliminary End of Year Actuarial Value of Assets (AVA) [(i) - (g)]	393,387,721	436,610,000	464,843,000
(k)	Final End of Year Actuarial Value of Assets [not less than 80% and not greater than 120% of MVA	393,387,721	436,610,000	464,843,000
(l)	Estimated Net Investment Return on MVA	0.35%	11.00%	15.00%
(m)	Estimated Net Investment Return on AVA		29,658,000	39,053,000
(n)	Estimated Net Investment Return on AVA	5.87%	7.20% ✗	9.06% ✓
(o)	Expected Investment Return on AVA		29,879,000	31,262,000
(p)	Actuarial Value of Asset Gain/(Loss) [(m) - (o)]		(221,000) ✗	7,791,000 ✓
(q)	Benefit Increase Allowed under SCRSP	0.00	0.00	2.00 ✓

A sample projection of asset values is shown to the left.

After a small loss in 2016 and gains in 2017 and 2018, the total deferred asset gains exceed the deferred asset losses – item (i) – at 12/31/2018. However, because the return on the AVA is less than the assumed 7.25%, a benefit increase is not considered under the SCRSP.

An asset gain in 2019 results in a return on the AVA of 9.06%, which is greater than 7.25%, resulting in a $7.8 million gain. This allows for a $2 increase in the benefit amount.

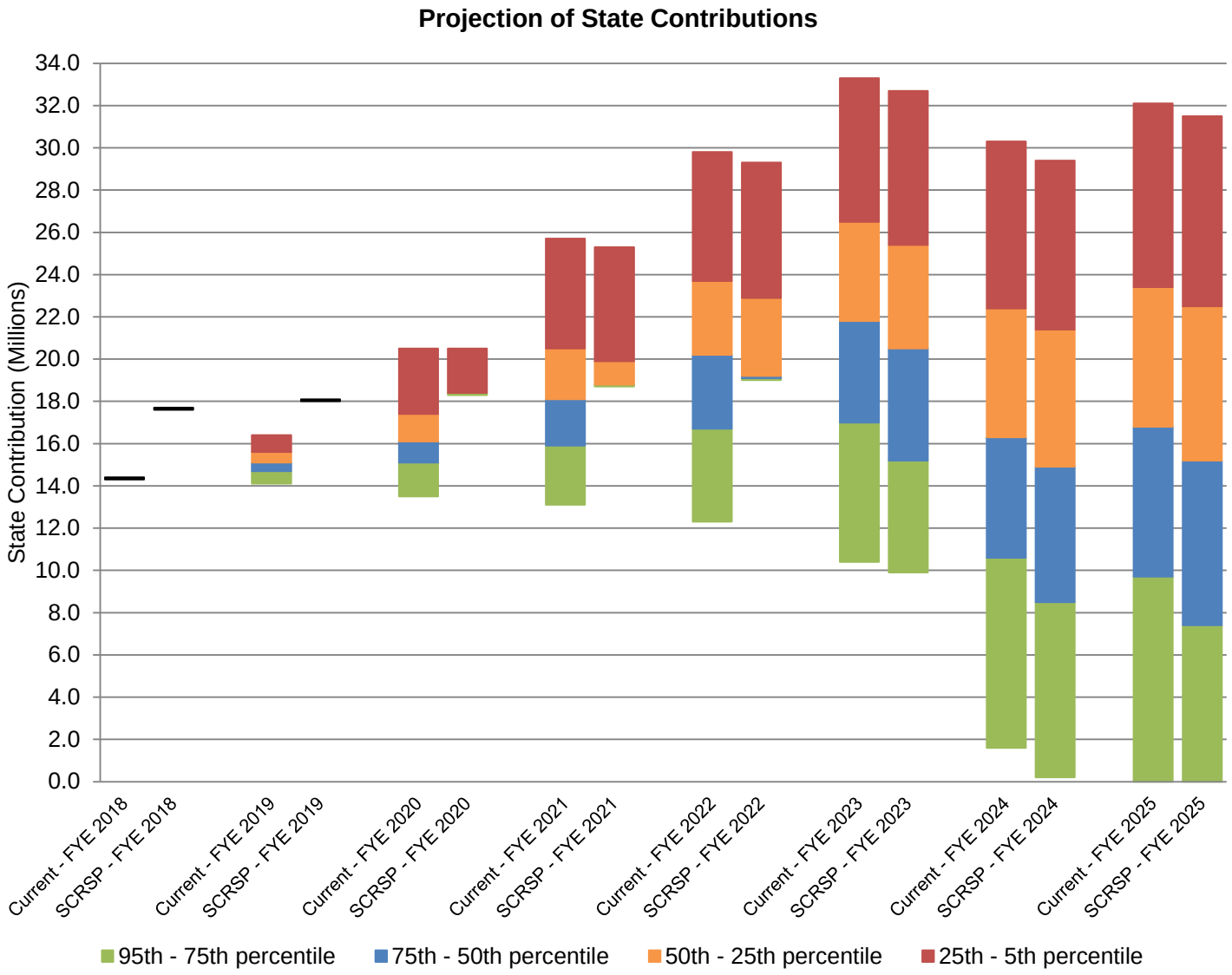
State Contribution Rate Stabilization Policy: Member Contribution Increases

- This example also provides a methodology for increases in member contributions as benefit amounts are increased.
- Increases in member contributions promote equity between stakeholders and share the responsibility for the future health of the Fund.
- Monthly member contributions will be increased by $5 in any year that a benefit increase is granted AND the member's share of the Fund's normal cost is less than 50%
  - The member's share of the normal cost at December 31, 2015 is approximately 38%. Therefore, the first benefit increase is expected to increase the member contributions from $10 a month to $15 a month.
  - The member contribution increase will be effective two years after the valuation date.
- The $5 increase is used to simplify administration and decrease the frequency of member contribution increases.

Projections: State Contribution Rates and Funded Ratios

- The following projection is based on:
  - December 31, 2015 valuation results of the FRSWPF
  - Valuation interest rate of 7.25% for all years
  - The asset returns have been modeled using an Asset Liability Model (ALM)
    - Actuarial valuations are projected into the future under 999 different asset return scenarios.
    - When the scenarios are compared, the results show the likelihood of certain events such as funding levels or contribution amounts as well as a range of all outcomes.
  - Assumes active headcount will remain level in future years
  - The projections under the current policy assume state contributions equal to the actuarially determined contribution and no benefit or member contribution increases
  - The projections under the SCRSP policy assume state contributions, benefit amount increases, and member contribution increases in accordance with the SCRSP described in this presentation.
    - The projections assume state contributions equal to the actuarially determined contribution for fiscal years ending after 2022, no benefit increases after July 1, 2021, and no member contribution increases after January 1, 2022.

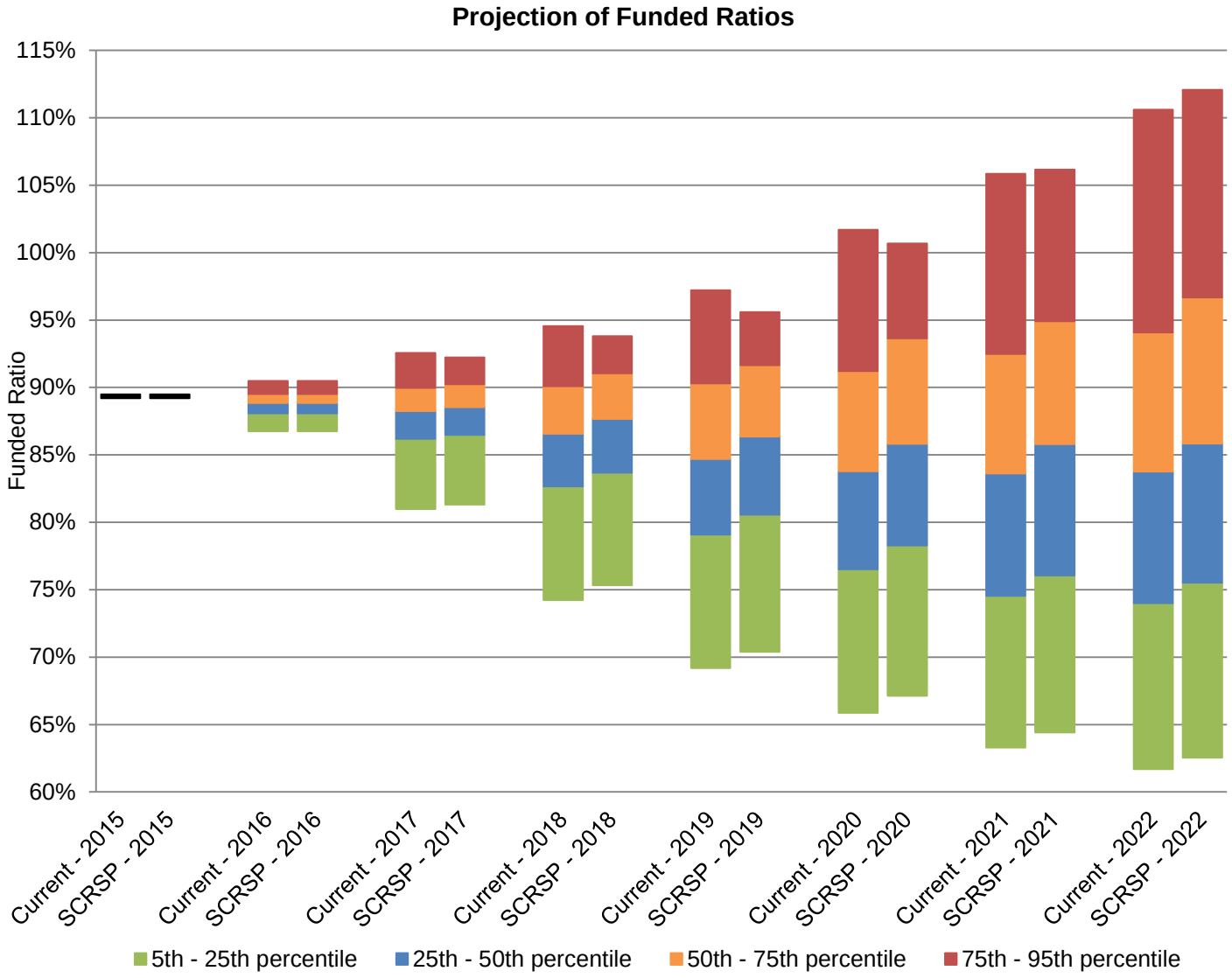
State Contribution Rate Stabilization Policy



When compared to the current policy, the SCRSP is projected to provide for a narrower range of State Contributions in the future. This is due to higher projected contributions in the early years of the policy and the likelihood of higher member contributions when the first benefit increase is triggered.

The last payment for the initial unfunded amortization base established at December 31, 2008 will be paid in FYE 2023, resulting in a decrease of $6.9 million for the FYE 2024 state contribution.

State Contribution Rate Stabilization Policy



The projection assumes no benefit increases or member contribution increases after the 12/31/2020 valuation

When compared to the current policy, the SCRSP is projected to provide for a narrower range of Funded Ratios as well. At the lower percentiles, this is due to contributions always being higher than the current policy. At the higher percentiles, this is due to benefit increases being triggered.

State Contribution Rate Stabilization Policy:
Projected Benefit Amounts and Member Contributions

Benefit Amounts	7/1/2019	7/1/2020	7/1/2021
95th Percentile	$172	$174	$177
75th Percentile	$170	$170	$170
50th Percentile	$170	$170	$170
25th Percentile	$170	$170	$170
5th Percentile	$170	$170	$170

Member Contributions	2020	2021	2022
95th Percentile	$15	$15	$15
75th Percentile	$10	$10	$10
50th Percentile	$10	$10	$10
25th Percentile	$10	$10	$10
5th Percentile	$10	$10	$10

Certification

The results were prepared under the direction of Michael Ribble and Larry Langer who meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. These results have been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about them.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law.

Michael A. Ribble, FSA, EA, MAAA
Principal, Consulting Actuary

Larry Langer, ASA, EA, MAAA
Principal, Consulting Actuary

Public Sector Retirement System Funding Policy Resources

- Conference of Consulting Actuaries Public Plans Community White Paper "Actuarial Funding Policies and Practices for Public Pension Plans" http://www.ccactuaries.org/publications/news/cca-ppc-white-paper.cfm
- American Academy of Actuaries Issue Brief "Objectives and Principles for Funding Public Sector Pension Plans" http://www.actuary.org/files/Public-Plans_IB-Funding-Policy_02-18-2014.pdf
- California Actuarial Advisory Panel White Paper "Model Actuarial Funding Policies and Practices for Public Pension and OPEB Plans" http://www.sco.ca.gov/Files-ARD/BudLeg/CAAP_Funding_Policies_w_letter.pdf
- Report from the Pension Funding Task Force 2013 (convened by the Center for State and Local Government Excellence) "Pension Funding: A Guide for Elected Officials" http://www.nctr.org/pdf/PensionFundingGuideBrief_Final.pdf
- GFOA Best Practice "Funding Defined Benefit Pensions" http://www.gfoa.org/funding-defined-benefit-pensions (no PDF)
- GFOA Best Practice "Core Elements of a Pension Funding Policy" http://www.gfoa.org/core-elements-funding-policy (no PDF)
- Society of Actuaries Blue Ribbon Panel on Public Pension Plan Funding "Report of the Blue Ribbon Panel on Public Pension Plan Funding" (report, summary, video and guide) https://www.soa.org/blueribbonpanel/

Questions?

THANK YOU