

Risk Assessment Update

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*Presentation to:
LEOFF 2 Board*



Office of the State Actuary
"Supporting financial security for generations."

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What Is A Risk Assessment?

- Allow actuaries to demonstrate and assess the effect on unexpected experience on pension plans
- How does volatility of annual plan experience impact our plans?
- How might below expected investment returns, lower than expected state revenue growth or above expected inflation impact their financial risk?
- How could their affordability and funded status change in the future?
- How do past practices in the areas of meeting funding requirements or enhancing benefit levels impact our plans if those practices continue?



How Do We Perform Risk Assessments?

- We created a customized model
- Simulate thousands of future economic environments
- Employ a range of assumptions in the model that differ from the assumptions we use in a standard actuarial valuation
- We review and update those assumptions regularly
- Please see the [Risk Assessment Assumptions Study](#) for additional information on our latest study

How Do We Communicate The Results?

- We present select key risk measurements and graphs to supplement those measurements
- For these measurements, we select two categories that generally compete
 - Affordability
 - Solvency
- Affordability measures
 - Compare amount of pension contributions from the state, as an employer, to revenue from GF-S budget
- Solvency measures
 - Determine how many future scenarios result in “pay-go” (premature trust fund exhaustion)
 - Funded status below 60 percent
- Improving one category will generally weaken the other

Purpose And Intended Use Of Risk Measurements

- Values change each year and can also change materially with use of different assumptions and methods
- Measures assist stakeholders in the identification, measurement, and management of financial risks to pensions systems
- Provide most value when monitored over time and used to evaluate and understand why risks change over time or would change under a proposed revision to pension system
- Risk measurements do not represent forecasts or predictions



Select Measures Of Pension Risk As Of June 30, 2015

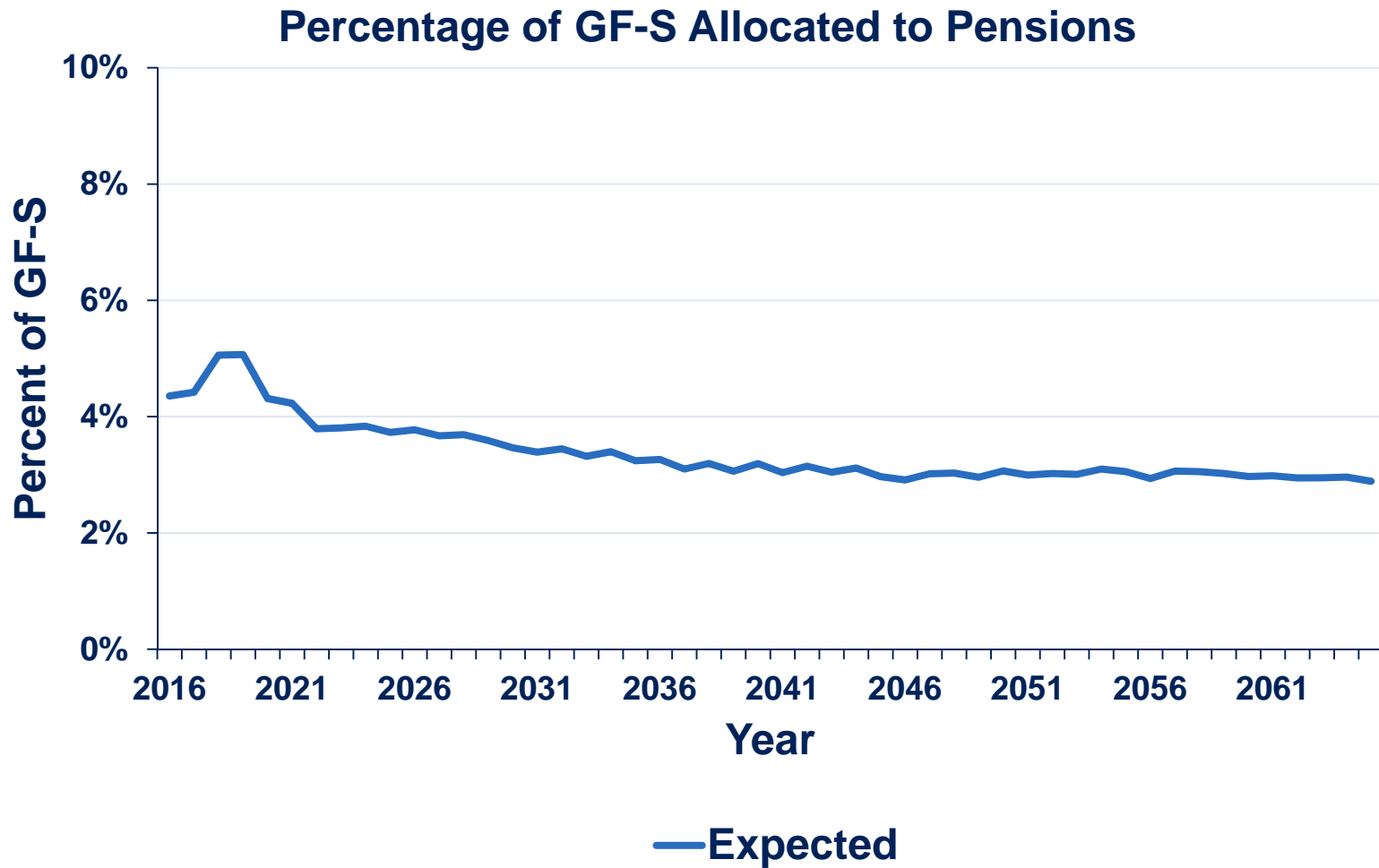
Select Measures of Pension Risk as of June 30, 2015		
	FY 2016-35	FY 2036-65
Affordability Measures		
Chance of Pensions Double their Current Share of GF-S ¹	4%	5%
Chance of Pensions Half their Current Share of GF-S ¹	35%	39%
Solvency Measures		
Chance of PERS 1, TRS 1 in Pay-Go ²	16%	18%
Chance of Open Plan in Pay-Go ²	1%	3%
Chance of PERS 1, TRS 1 Total Funded Status Below 60% ³	100%	34%
Chance of Open Plans Total Funded Status Below 60%	19%	25%

¹ Pensions approximately 4.4% of current GF-S budget; does not include higher education.

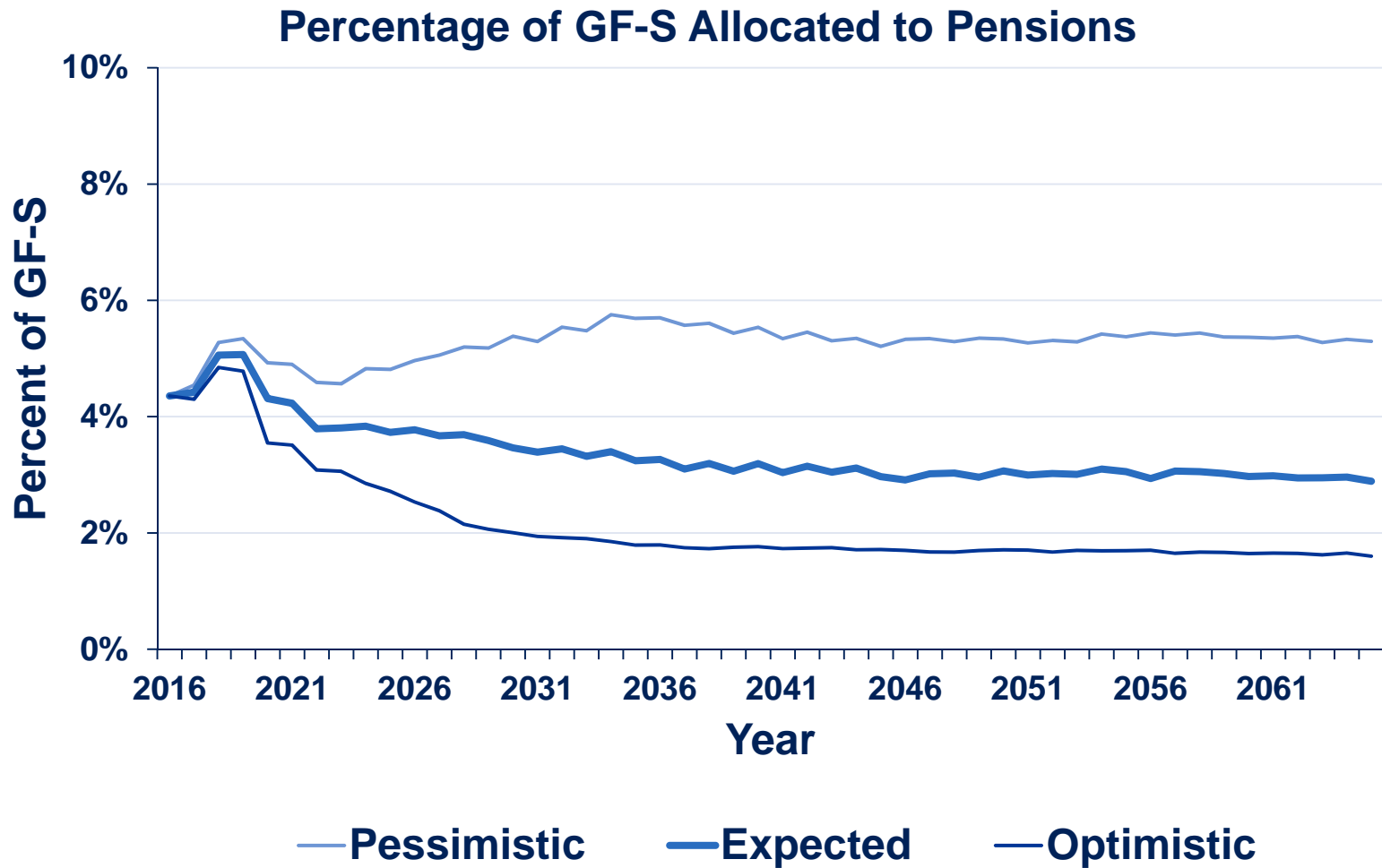
² When today's value of annual pay-go cost exceeds \$50 million.

³ Below 60% funded as of 2015 Actuarial Valuation Report (AVR).

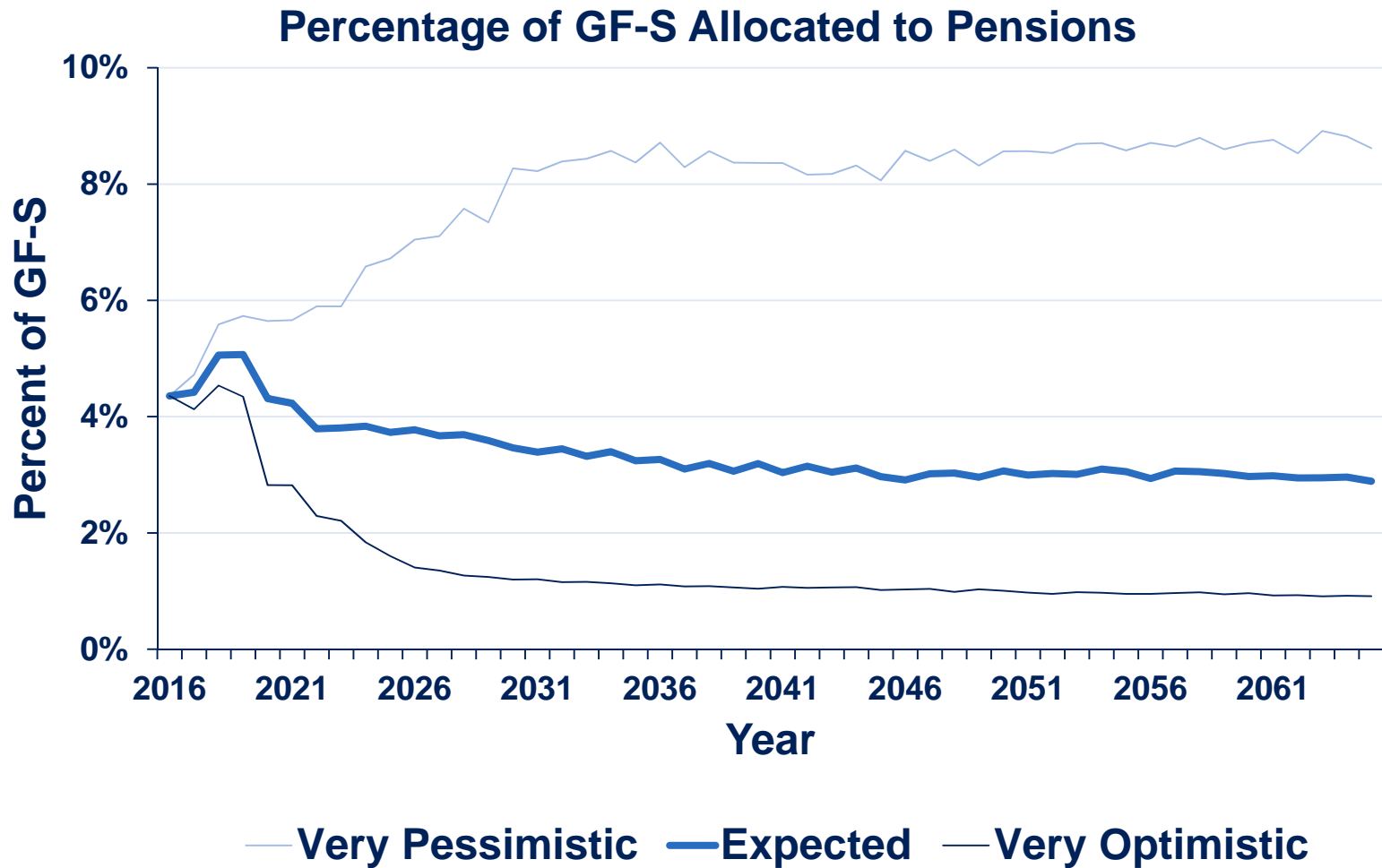
Affordability Measures: Percentage Of GF-S Allocated To Pensions



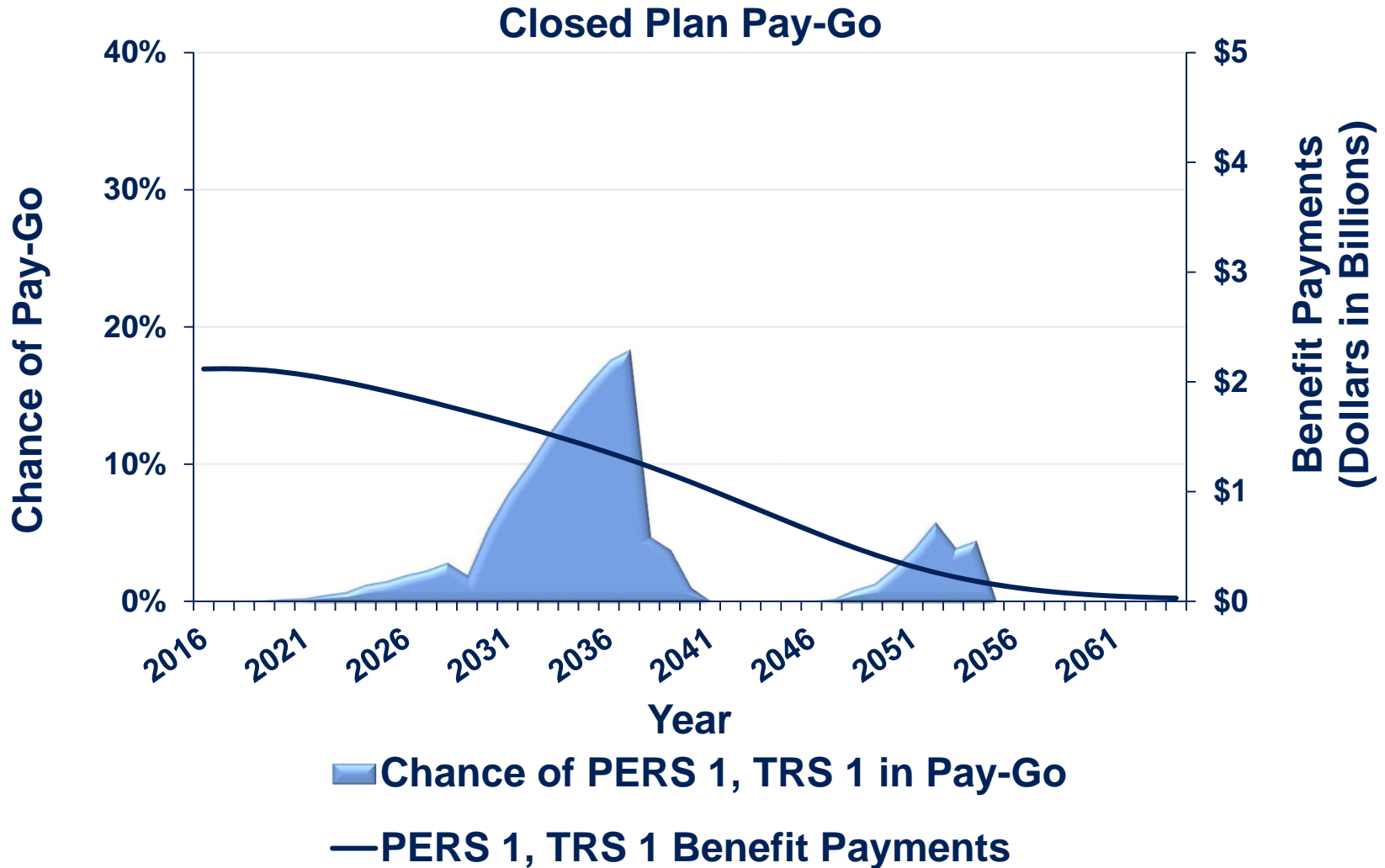
Affordability Measures: Percentage Of GF-S Allocated To Pensions



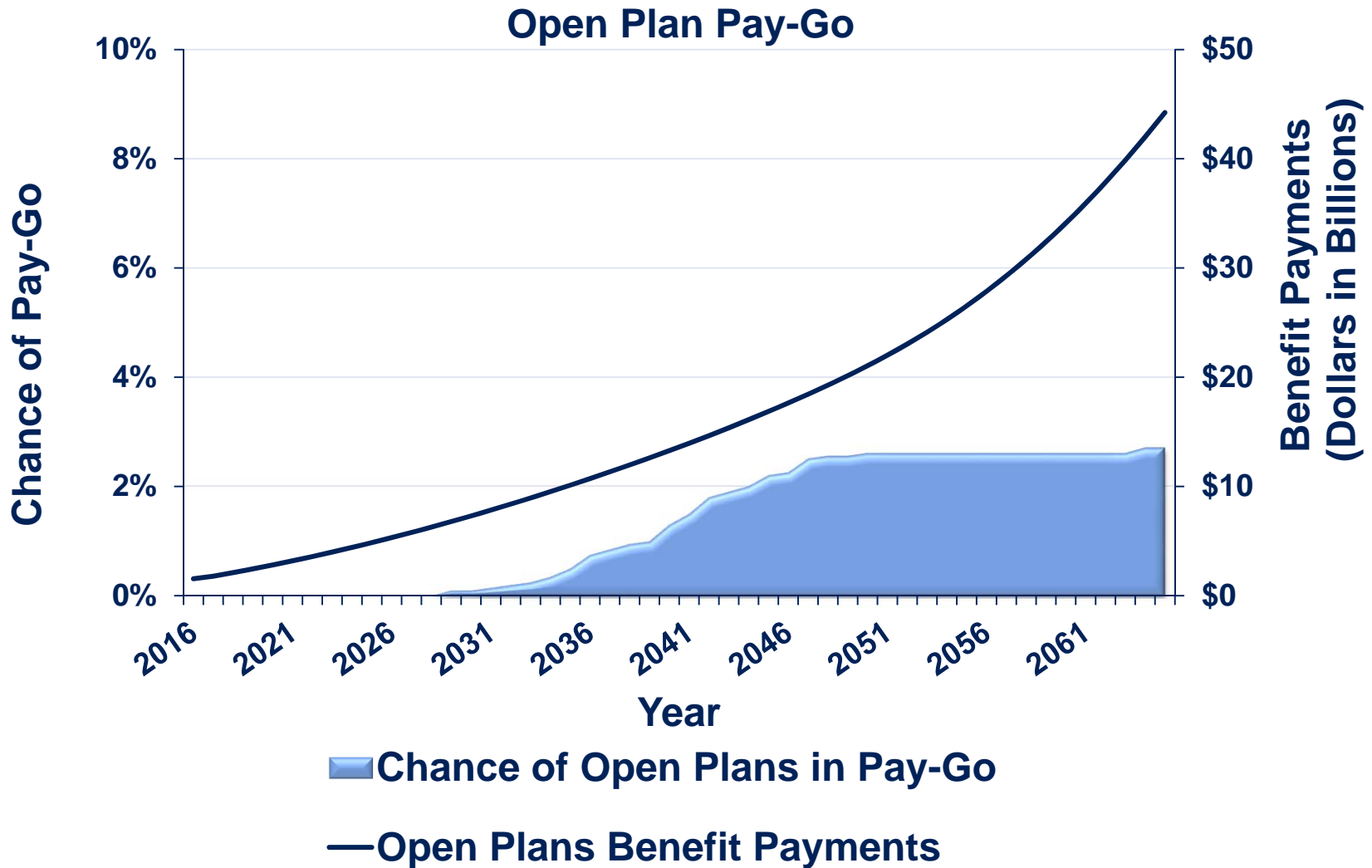
Affordability Measures: Percentage Of GF-S Allocated To Pensions



Solvency Measures: Closed Plan Pay-Go Risk (PERS 1, TRS 1)



Solvency Measures: Open Plan Pay-Go Risk



Solvency Measures: LEOFF 2 Pay-Go Risk



Risk Analysis Assumes Continuation Of Past Practices

- In the risk model, we assume the adoption of recommended funding requirements and future benefit enhancements consistent with past practices
- We are not attempting to predict the practices of future Legislatures
- Rather, we're modeling the impact if past practices continue

Past Practices: Meeting Funding Requirements

Historical Percentage of Recommended Contributions Made From 1991 to 2016						
	PERS	SERS	PSERS	TRS	LEOFF	WSPRS
Minimum	34%	36%	63%	20%	78%	72%
Average	85%	75%	88%	81%	101%	97%
Maximum	104%	100%	100%	100%	115%	110%

Past Practices: Benefit Enhancements

Average Annual Percentage Change in Liabilities Due to Benefit Enhancements						
	PERS 1	PERS 2/3 SERS 2/3	TRS 2/3	LEOFF 1	LEOFF 2	WSPRS
	TRS 1	PSERS 2				
From 1989 to 2015	0.25%	0.40%	0.56%	0.04%	1.01%	0.40%

Measures If Plans Receive Full Funding And Have No Benefit Enhancements

Select Measures of Pension Risk as of June 30, 2015		
	FY 2016-35	FY 2036-65
Affordability Measures		
Chance of Pensions Double their Current Share of GF-S ¹	3%	3%
Chance of Pensions Half their Current Share of GF-S ¹	45%	62%
Solvency Measures		
Chance of PERS 1, TRS 1 in Pay-Go ²	4%	4%
Chance of Open Plan in Pay-Go ²	0%	1%
Chance of PERS 1, TRS 1 Total Funded Status Below 60% ³	100%	13%
Chance of Open Plans Total Funded Status Below 60%	8%	10%

¹ Pensions approximately 4.4% of current GF-S budget; does not include higher education.

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Risk Management Considerations

- Making 100 percent of actuarially required contributions lowers financial risk to the plans
 - This includes contributions to the UAAL in PERS 1 and TRS 1
- Enacting future benefit enhancements can increase risks to the retirement systems
 - Future enhancements, if reasonable from financial risk perspective, would not significantly increase affordability or solvency risk
- Maximum employee contribution rates in TRS 2 and WSPRS transfer risks to employers in those systems
- LEOFF 1 would face significantly higher pay-go risk if the plan receives no funding after 2024 if necessary
 - Funding method under current law silent on contributions after 2024

Other Considerations

- We will continue to update the risk model and these measurements annually
- Please replace these risk measurements in the future when more recent measurements become available
- Please see the [2010 Risk Assessment Report](#) if you would like additional information and background on the development of the original risk assessment



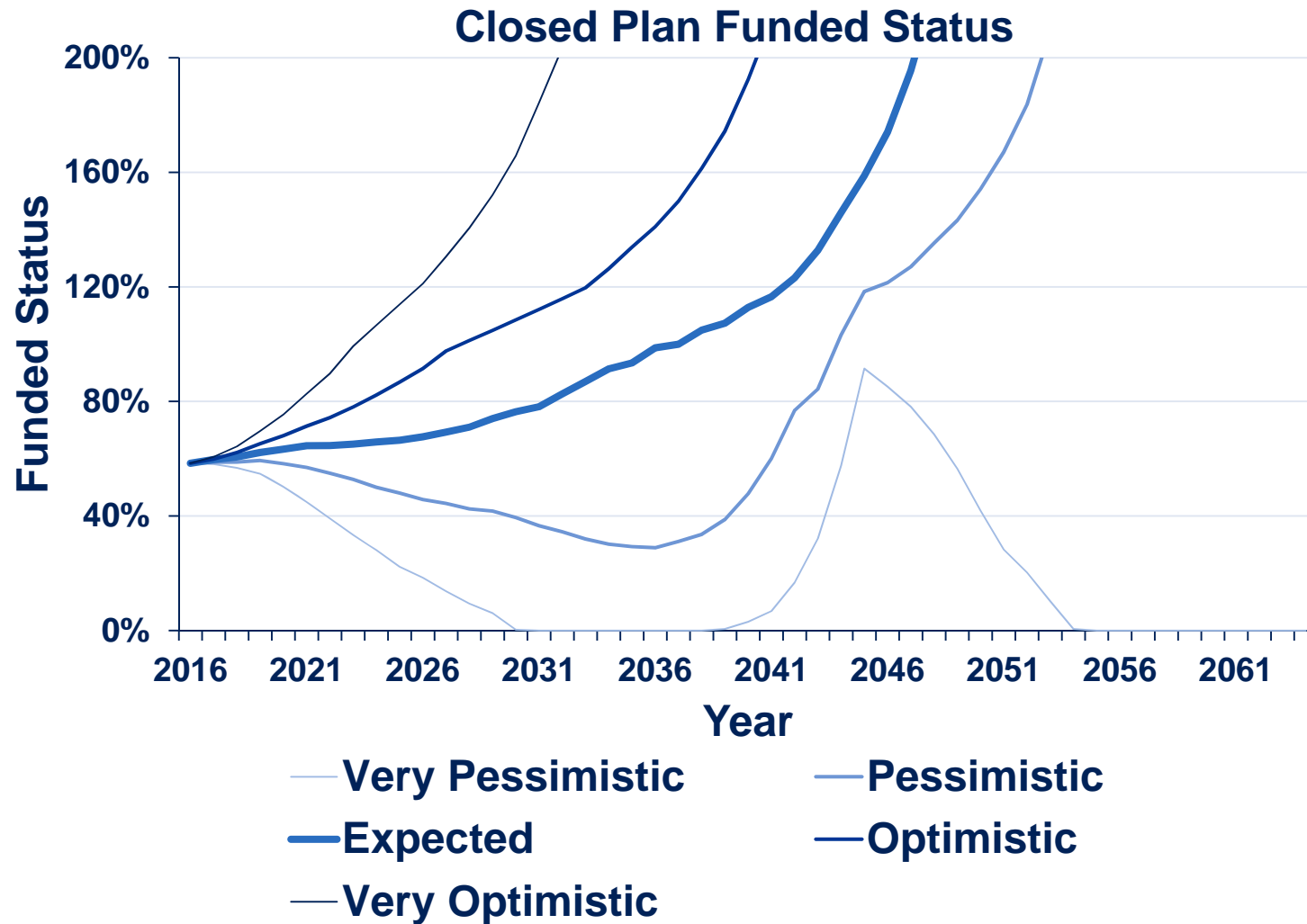
Questions?



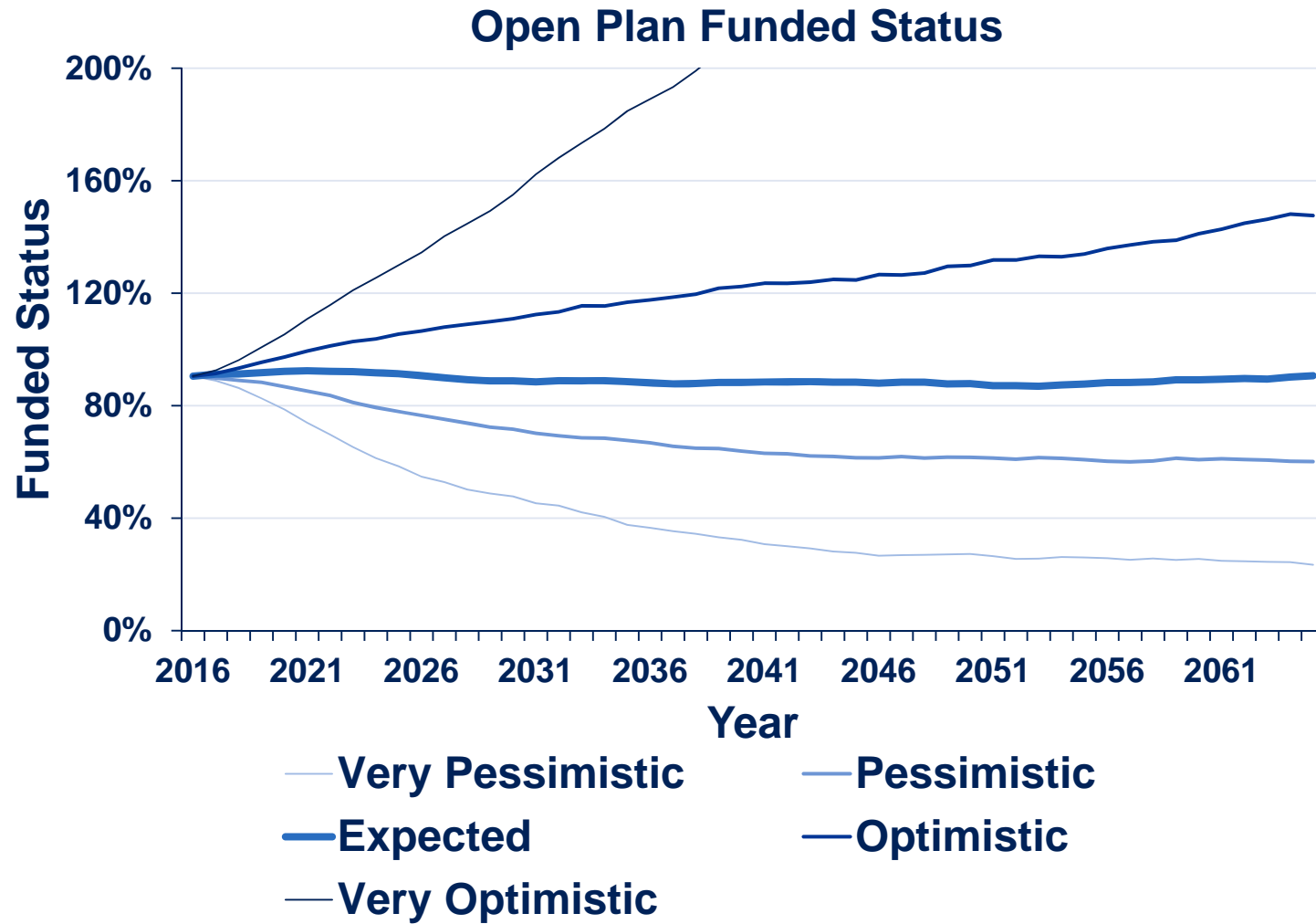
Appendix

- Solvency Measures
 - Closed plan funded status (PERS 1, TRS 1)
 - Open plan funded status
- Select Measures of Pension Risk under two scenarios
 - Plans receive full funding, but have benefit enhancements based on past practices
 - Plans have no benefit enhancements, but experience funding shortfalls based on past practices

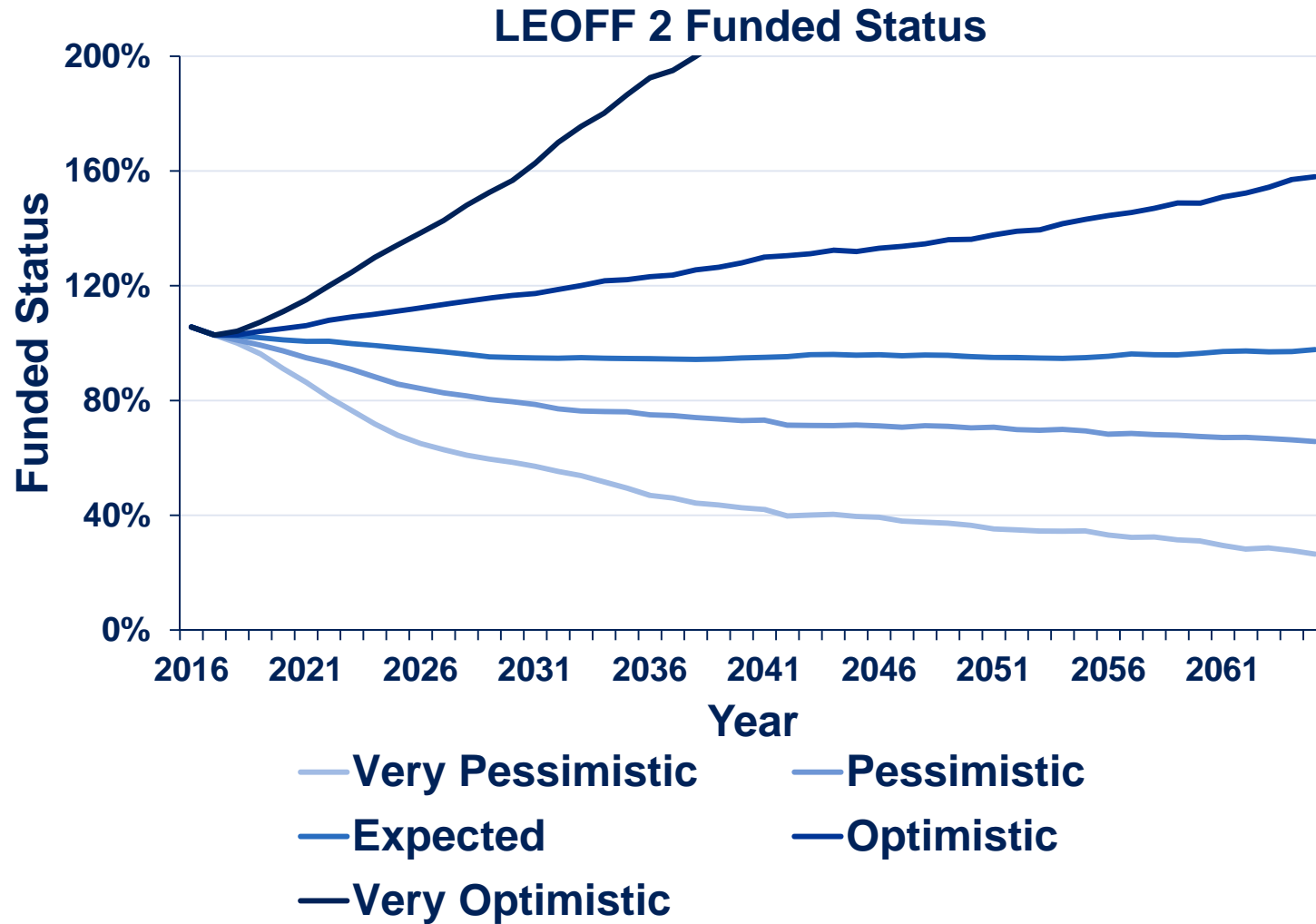
Solvency Measures: Closed Plan Funded Status



Solvency Measures: Open Plan Funded Status



Solvency Measures: LEOFF 2 Funded Status



Measures If Plans Receive Full Funding, But Have Benefit Enhancements Based On Past Practices

Select Measures of Pension Risk as of June 30, 2015		
	FY 2016-35	FY 2036-65
Affordability Measures		
Chance of Pensions Double their Current Share of GF-S ¹	4%	5%
Chance of Pensions Half their Current Share of GF-S ¹	31%	37%
Solvency Measures		
Chance of PERS 1, TRS 1 in Pay-Go ²	5%	6%
Chance of Open Plan in Pay-Go ²	0%	2%
Chance of PERS 1, TRS 1 Total Funded Status Below 60% ³	100%	17%
Chance of Open Plans Total Funded Status Below 60%	12%	17%

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Measures If Plans Have No Benefit Enhancements, But Experience Funding Shortfalls Based On Past Practices

Select Measures of Pension Risk as of June 30, 2015		
	FY 2016-35	FY 2036-65
Affordability Measures		
Chance of Pensions Double their Current Share of GF-S ¹	3%	3%
Chance of Pensions Half their Current Share of GF-S ¹	46%	61%
Solvency Measures		
Chance of PERS 1, TRS 1 in Pay-Go ²	13%	14%
Chance of Open Plan in Pay-Go ²	0%	1%
Chance of PERS 1, TRS 1 Total Funded Status Below 60% ³	100%	29%
Chance of Open Plans Total Funded Status Below 60%	12%	16%

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