

Projection Analysis and Inflation Impacts

Presentation to: LEOFF 2 Board

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What We'll Be Sharing Today...

PART 1

- Projection Analysis
 - Background
 - Deferred investment gains/losses
 - Funded ratio and contribution rate projections

PART 2

- Inflation Impacts
 - Background
 - Historical and forecasted inflation
 - Effects of inflation on COLAs and salary growth



Part 1: Projection Analysis

Difference Between Valuations and Projections

■ Valuations

- Deterministic (best estimate results)
 - Point-in-time snapshot of current plan measures
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■ Projections

- Deterministic or stochastic (variable results)
- 50 years of future valuations
- Forecast of plan measures

What Is Included in Projections?

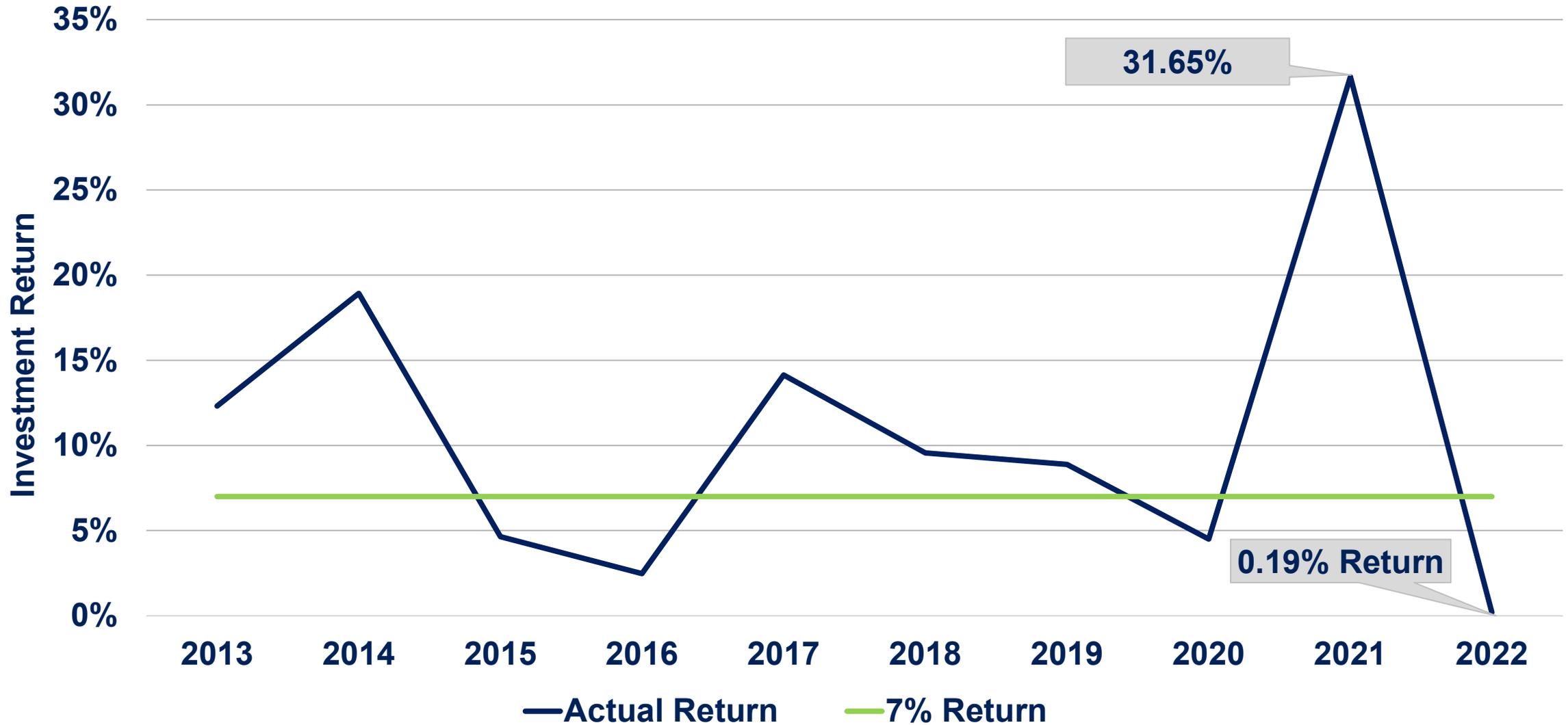
- Recognition of deferred investment gains/losses over time
- All future experience occurs as expected
- Assumptions regarding future new members joining the plan
- Stochastic projections model variability of investment earnings assumption
 - Includes 2,000 different scenarios of investment earnings
 - Likelihood of earnings provided by WSIB
 - Does not represent every possible outcome



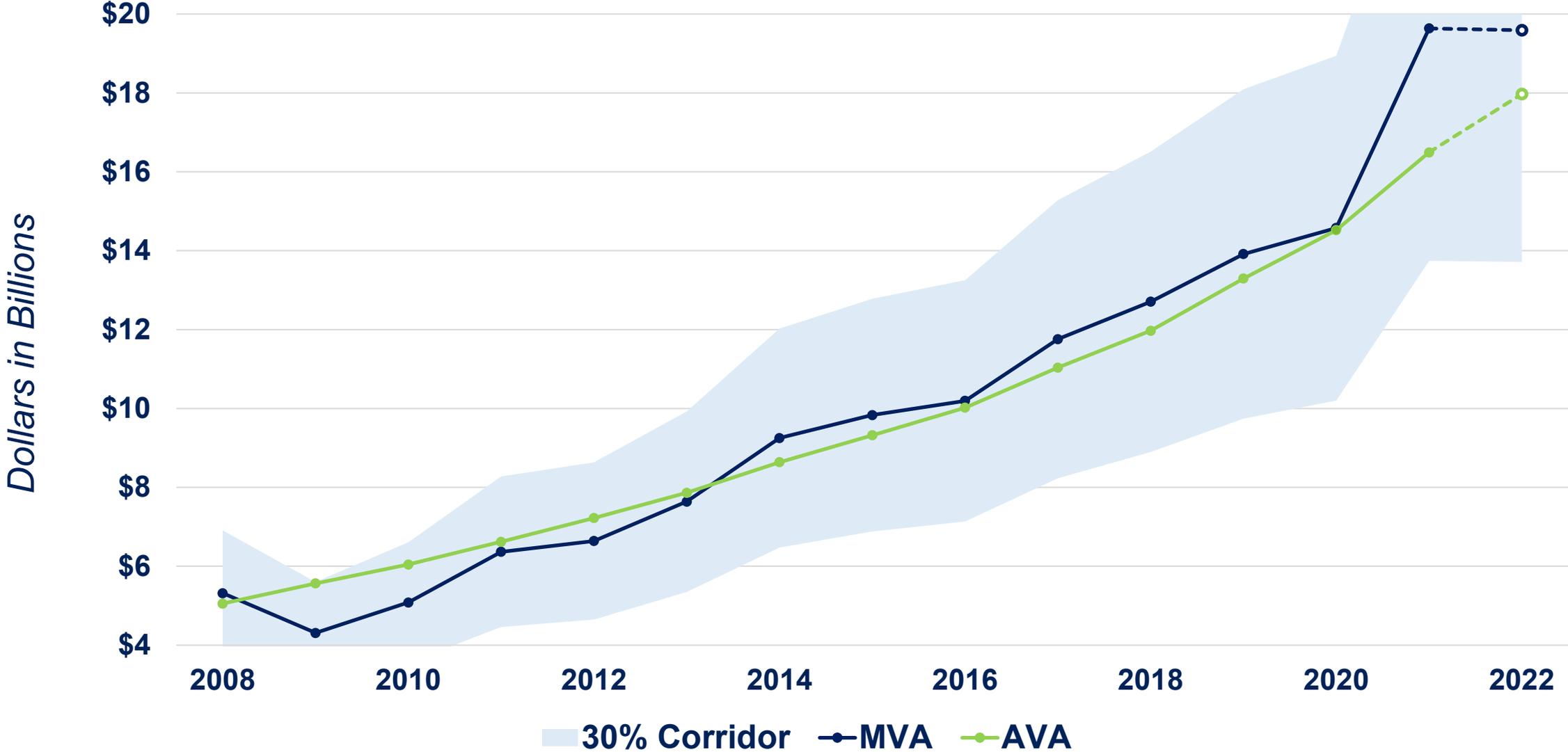
What Are Deferred Investment Gains/Losses?

- When actual earnings vary from expected (7.0%), investment gains/losses are smoothed over a period up to 8 years
- Actuarial Value of Assets (AVA) is asset smoothing method
- Aims to reduce market volatility that impacts plan measures
 - Funded status
 - Contribution rates
- Expect deferred gains/losses to offset over the long-term

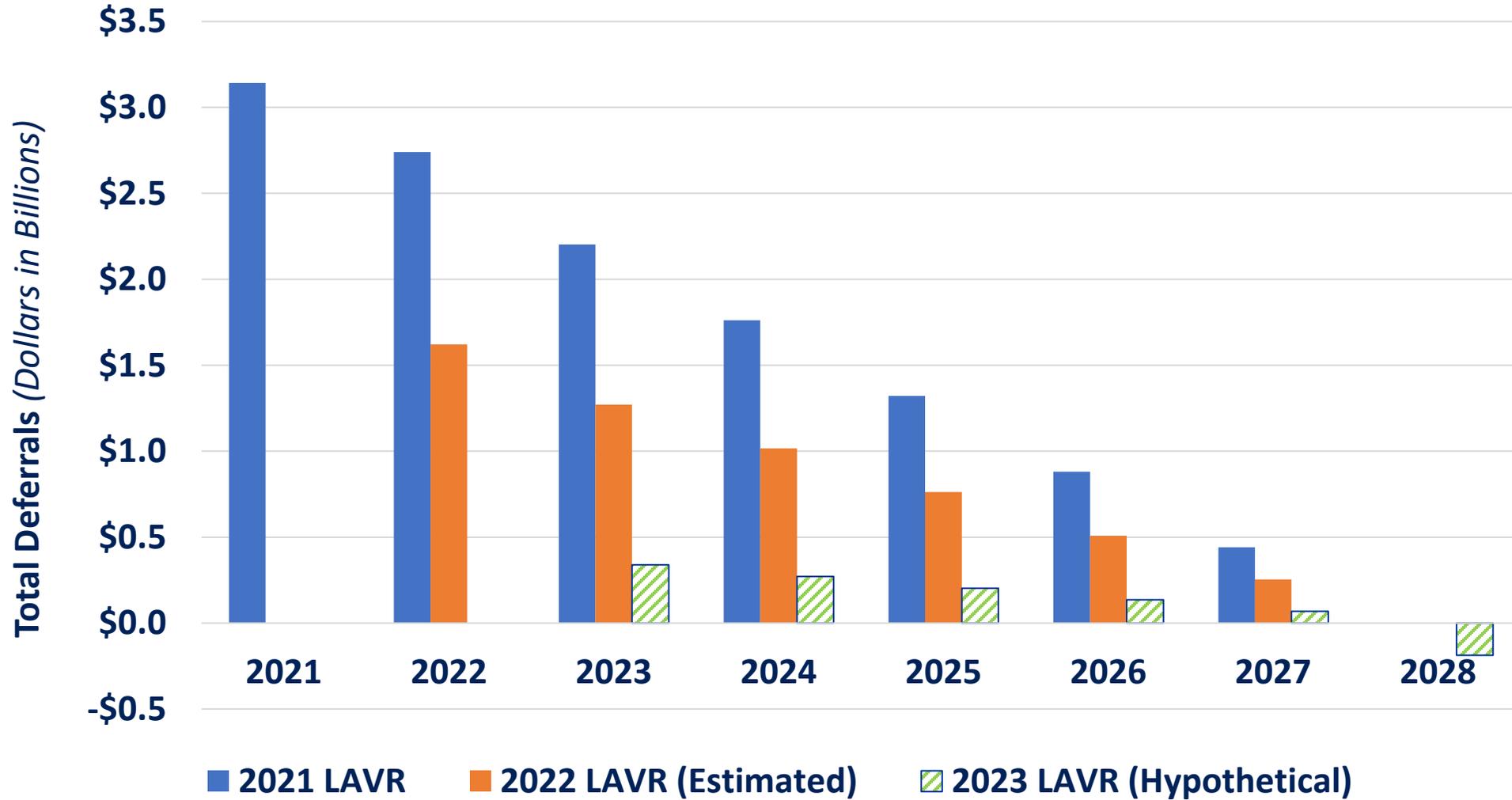
Historical Investment Returns



Actuarial Value of Assets Smooths Investment Gains/Losses



Projected Deferrals



Projection of Plan Measures

■ Funded Ratio

- Compares AVA to value of members' earned benefits
- 100% means there are enough assets to pay for earned benefits

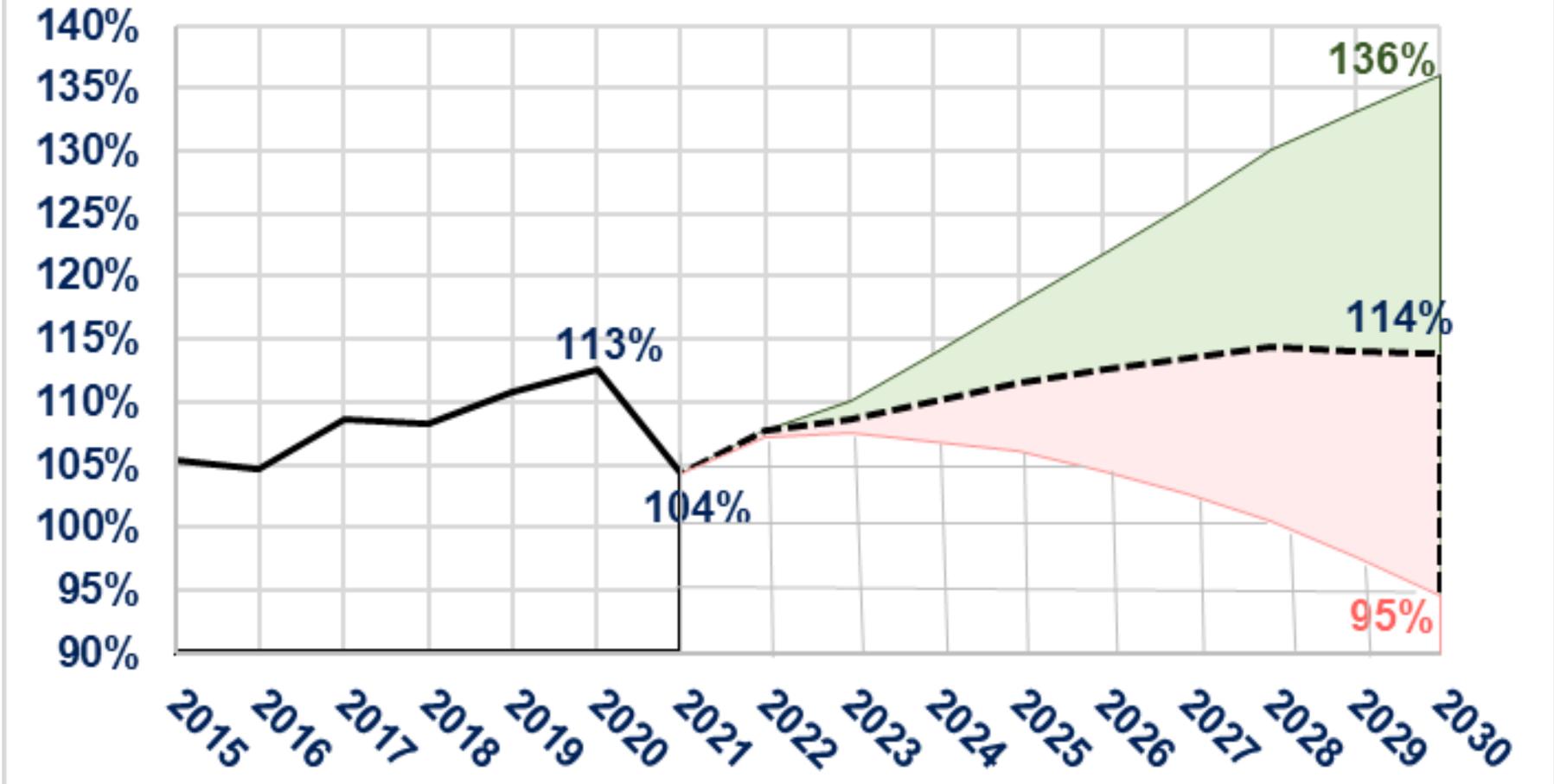
■ Contribution Rates

- Based on LEOFF 2 contribution rate policy under SHB 1701

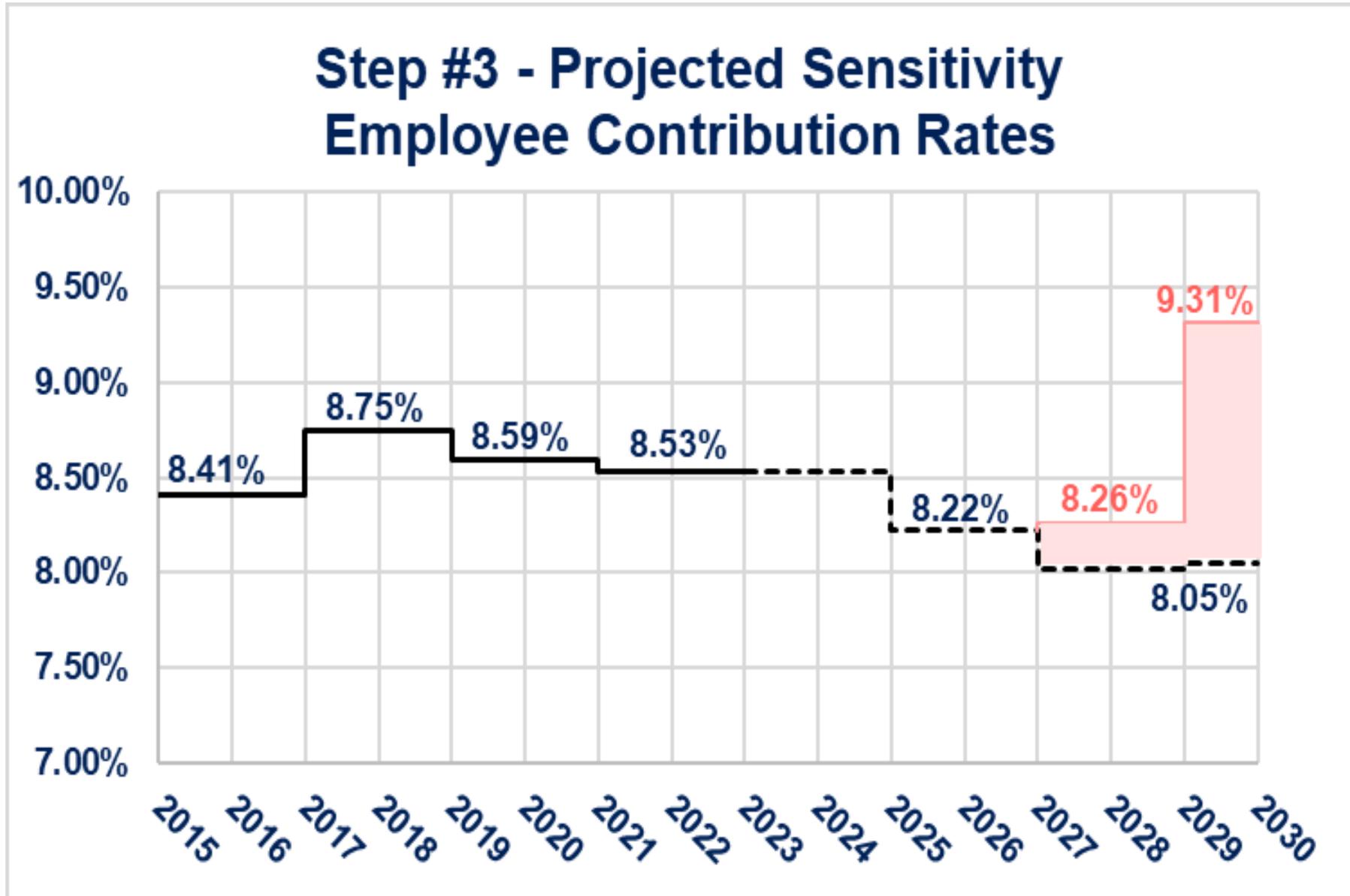
■ Projections are an estimate of the future funding progress of the plan and actual results may look significantly different

Funded Ratio Projection

Step #3 - Projected Sensitivity Funded Ratio



Employee Contribution Rate Projection

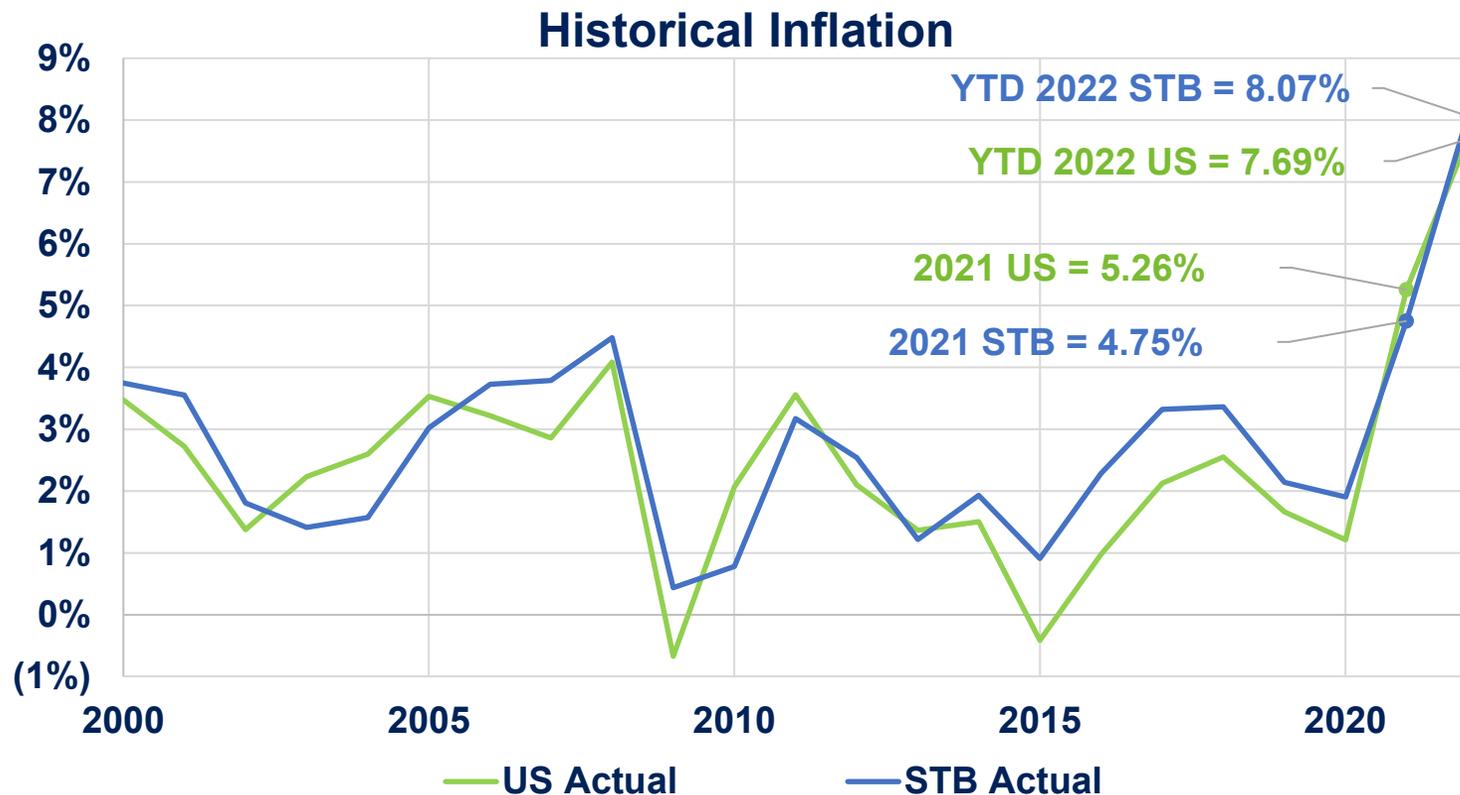


Part 2: Inflation Impacts

Inflation Background

- Measured based on Seattle-Tacoma-Bellevue (STB) CPI
- Current assumption is 2.75% per year
 - OSA studies this assumption in odd-numbered years as part of our Economic Experience Study (EES)
- Unexpected inflation impacts the plan in two ways
 - Possible adjustment to assumptions if long-term expectations change
 - Changes in plan cost reflecting difference in actual vs assumed inflation
 - Retiree member COLAs
 - Active member salaries

Historical and Forecasted Inflation



Median National Inflation Forecasts by Year

Horizon	10 Years	20-30 Years
2022	2.48%	2.44%
2021	2.30%	2.30%
2020	2.02%	1.67%
2019	2.18%	1.89%
2018	2.22%	2.19%

Source: Society of Actuaries presentation "Inflation - Effects, Forecasts, and Role in Pension Valuations", September 7, 2022.
 Note: Median of 8-10 expert inflation forecasters (e.g., Congressional Budget Office, Social Security Administration, Federal Reserve Bank).

- Our current long-term national inflation assumption is 2.35% per year
- Forecasts account for short-term volatility in the context of forecast horizon

Inflation Used to Determine Member COLAs

- Member COLAs are based off STB inflation
 - Capped at 3% increase per year
 - Includes banking feature
- Banking limits volatility and recognizes unexpected inflation over time
 - Somewhat analogous to deferred investment gains/losses

COLA Banking Example

Year	Inflation	COLA	Bank Change	Total Bank
2019	2.14%	2.14%	0.00%	0.00%
2020	1.90%	1.90%	0.00%	0.00%
2021	4.75%	3.00%	1.75%	1.75%
2022	8.00%	3.00%	5.00%	6.75%
2023	2.50%	3.00%	(0.50%)	6.25%
2024	1.00%	3.00%	(2.00%)	4.25%

Note: Inflation values for 2022 and beyond are hypothetical and for illustration only.

Inflation Can Drive Salary Growth Changes

- Active member salaries may increase to counter rising inflation
 - Difficult to estimate size and timing of unexpected salary growth
- Impact of larger than expected salary growth recognized in annual valuations

Impacts of High Inflation On Plan Measures

	If Retiree COLAs Increase More than Expected	If Active Salaries Increase More than Expected
Liability	↑	↑
Funded Ratio	↓	↓
Contribution Rates	↑	↑

- Long-term inflation assumption revisited every two years

What Did We Cover Today?

■ Projection Analysis

- Smoothing gains/losses aims to reduce volatility
- Over the next decade, funded ratio is trending toward 114% and employee contribution rates are trending toward 8%

■ Inflation Impacts

- Affects member COLAs and salary growth
- Periods of high inflation increase liability, lowering funded ratio and increasing contribution rates
- OSA will revisit long-term inflation assumption as part of next year's EES

Questions? Please Contact: The Office of the State Actuary

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Thank You



Appendix – Deferred Gains/Losses

- AVA is asset smoothing method that aims to reduce volatility
 - Smooth investment gains/losses over a period up to 8 years
- Expect deferred gains/losses to offset over the long-term

(\$ in M)	Investment Gain / (Loss)				
	Act Inv	Exp Inv	Gain / (Loss)	Smoothing Years	Per Year Gain / (Loss)
	Earnings	Earnings			
2021	\$4,599	\$1,075	\$3,524	8	\$440
2022	\$36	\$1,340	(\$1,304)	7	(\$186)

(\$ in M)	Gain / (Loss) Smoothing				
	2021	2022	2023	2024-2028	2029
Pre-2021	(\$11)	(\$38)	\$97	--	--
2021	\$440	\$440	\$440	\$440	--
2022	--	(\$186)	(\$186)	(\$186)	--
Total	\$429	\$216	\$351	\$254	\$0

