LEOFF 1/LEOFF 2 Merger – Actuarial Analysis

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Presentation to LEOFF 2 Board

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Today's Presentation

- LEOFF 1 risks under certain scenarios
- Risk analysis for LEOFF 1/LEOFF 2 merger
- Actuarial analysis provided as separate document and included in materials

Risk Analysis Requested By LEOFF 2 Board

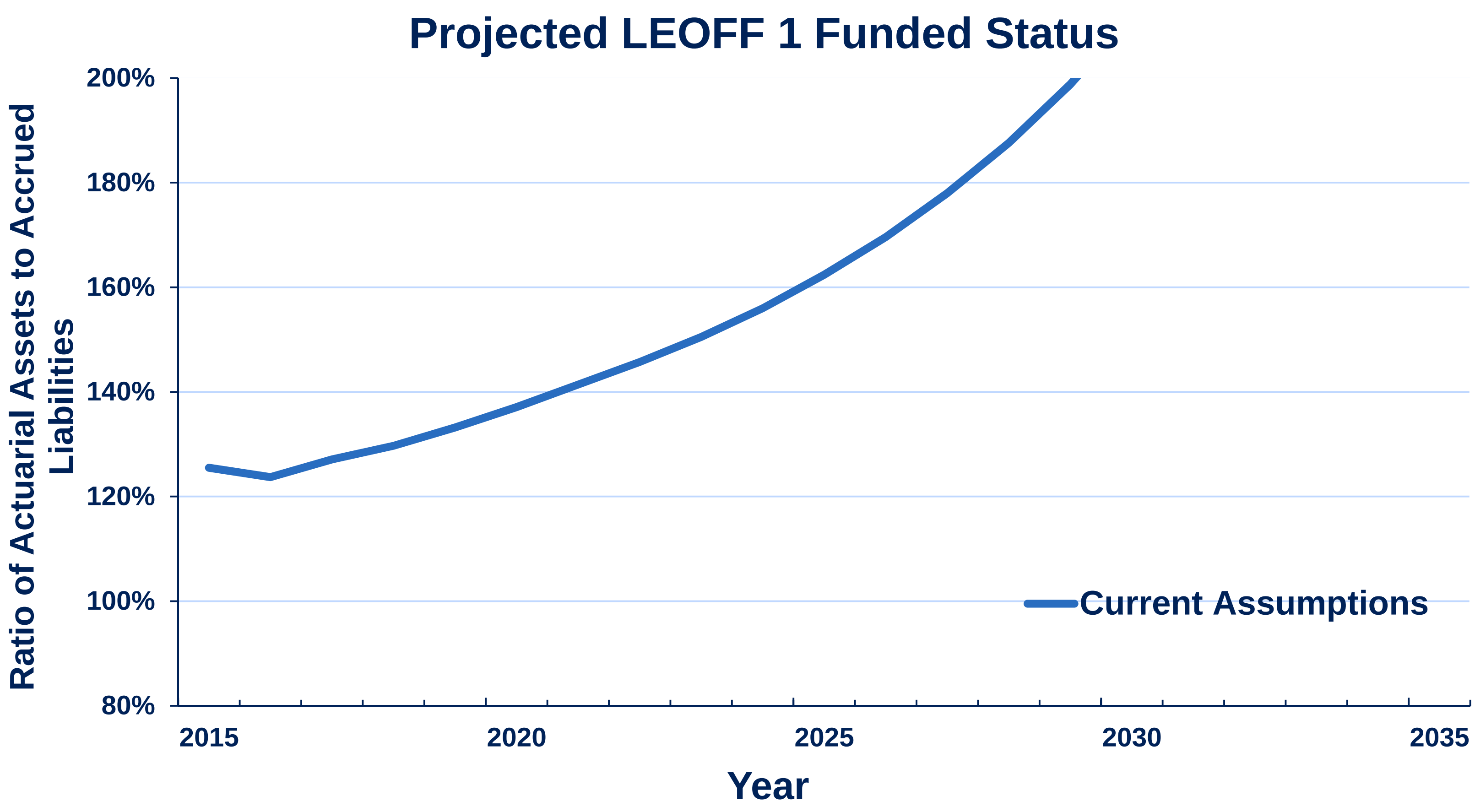
- Board requested scenario-based risk analysis on LEOFF 1
- Provides an understanding of LEOFF 1 risks before merger
- LEOFF 1 risks assumed by LEOFF 2 if plans are merged

Sample Of Scenarios Requested By LEOFF 2 Board

- Decrease long-term rate of return assumption from 7.7 to 7.5 percent
- Specific investment return scenarios
  - OSA added inflation scenarios
- Varying investment return paths
- Impact of providing $5,000 bonus payment

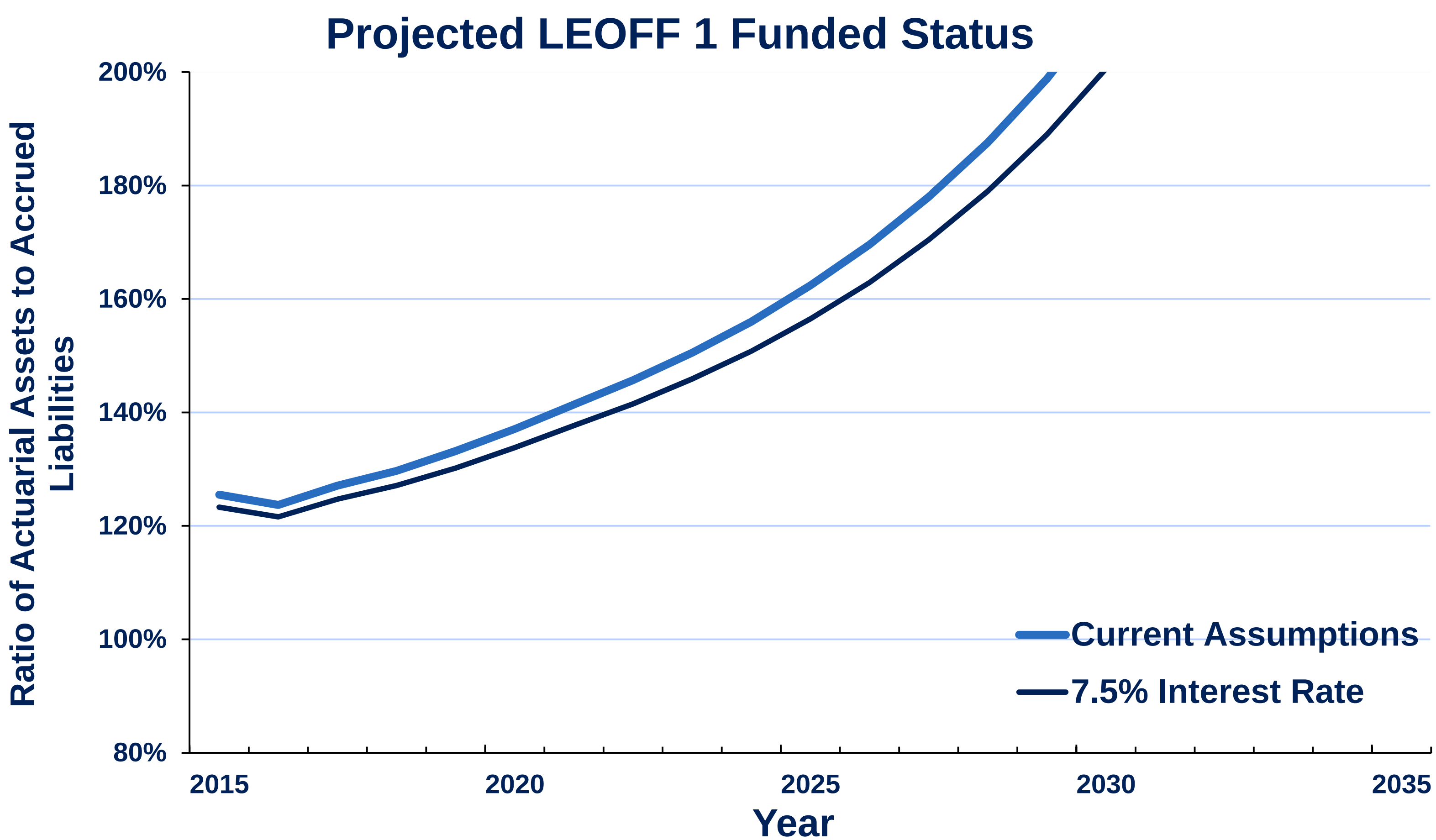
LEOFF 1 Funded Status Expected To Improve

- If fund earns the assumed 7.7 percent return each year



Funded Status Falls With Lower Assumed Long-Term Rate Of Return

- If fund earns an assumed 7.5 percent return each year



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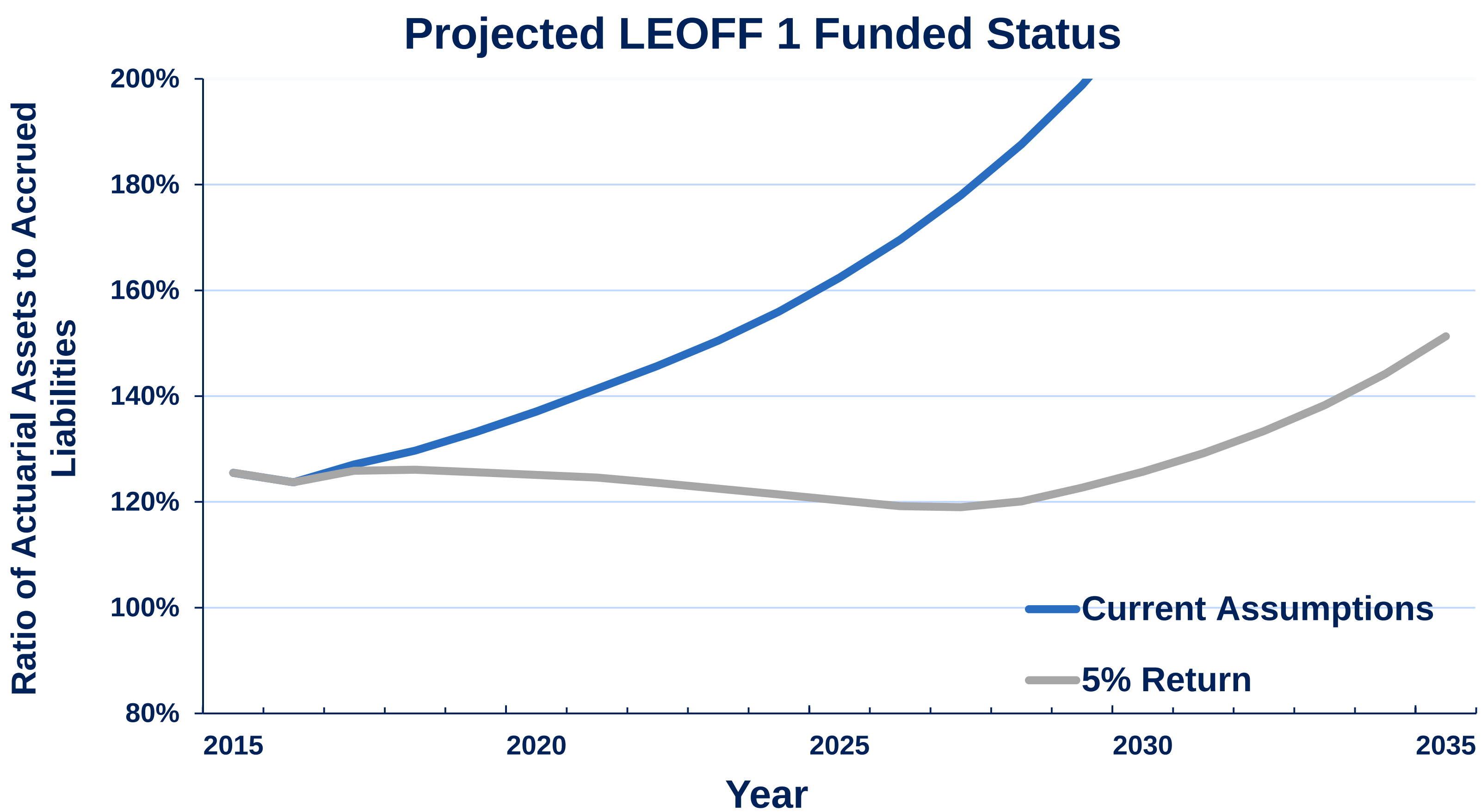
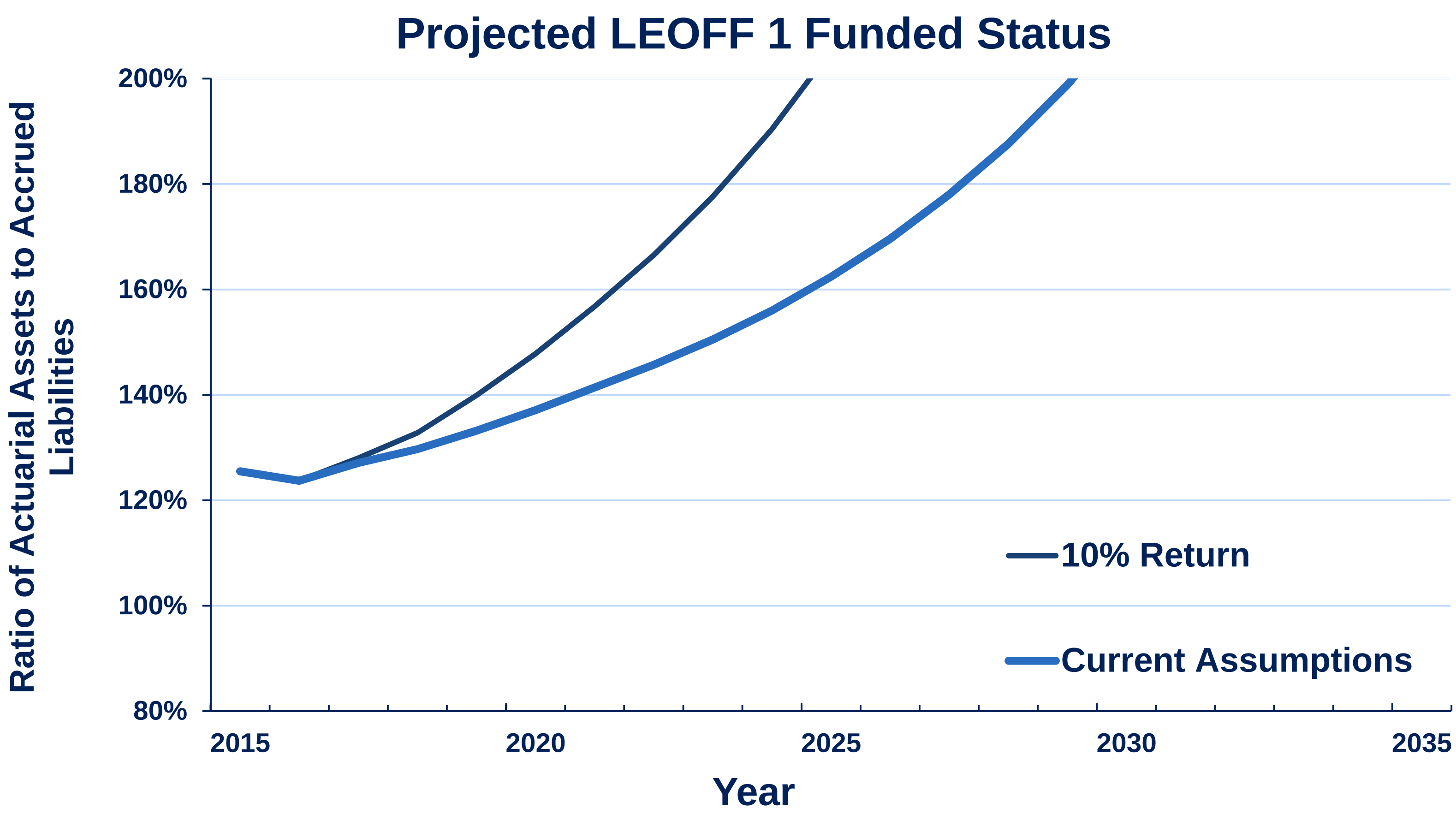
Funded Status Falls With Lower Than Expected Returns

- If fund earns 5.0 percent for next 10 years and 7.7 percent thereafter



Funded Status Improves With Better Than Expected Returns

- If fund earns 10.0 percent for next 10 years and 7.7 percent thereafter



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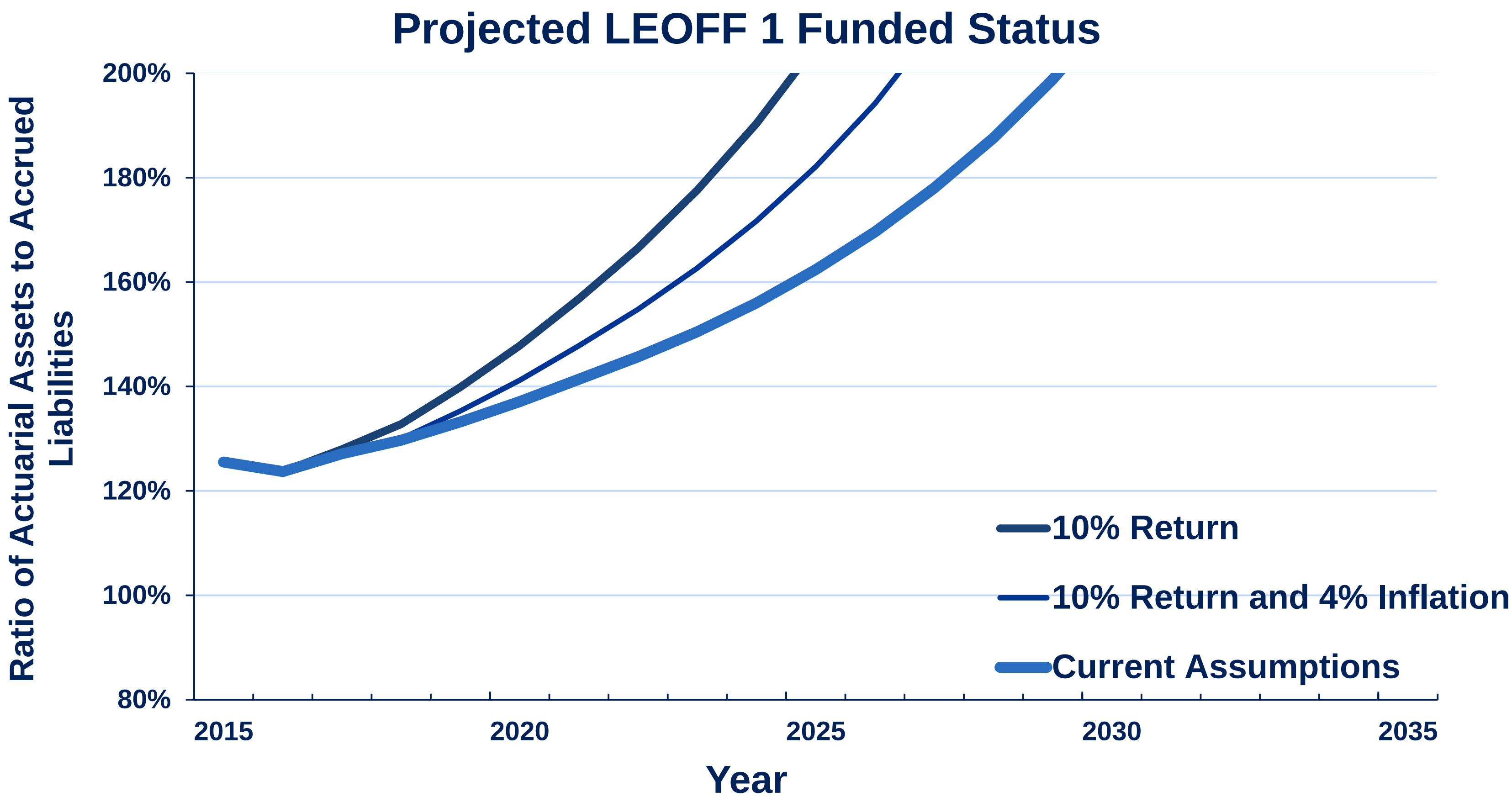
Higher Inflation Dampens Funded Status

- If plan experiences 10.0/4.0 percent return/inflation for next 10 years and 7.7/3.0 percent return/inflation thereafter



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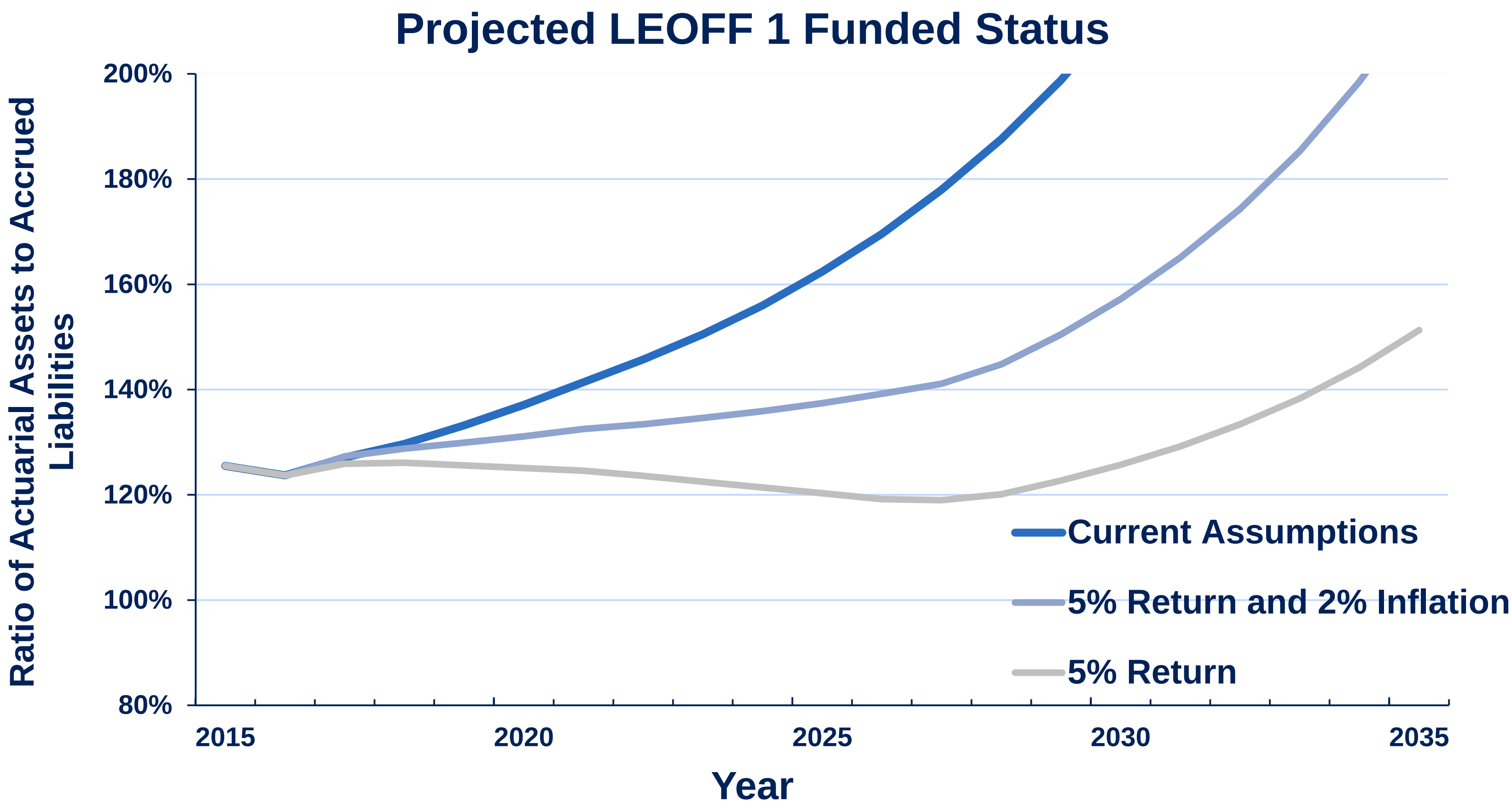
Lower Inflation Improves Funded Status

- If plan experiences 5.0/2.0 percent return/inflation for next 10 years and 7.7/3.0 percent return/inflation thereafter



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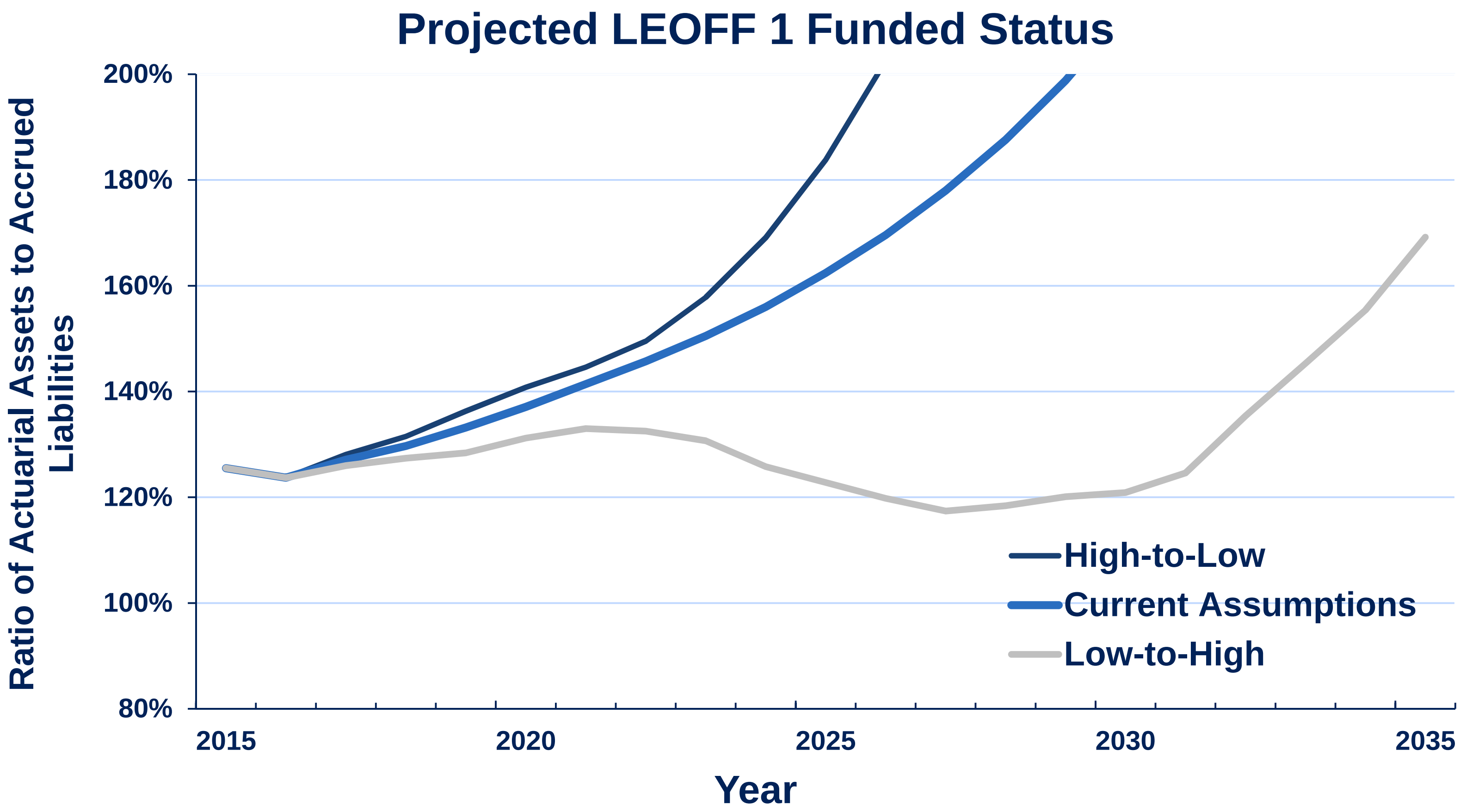
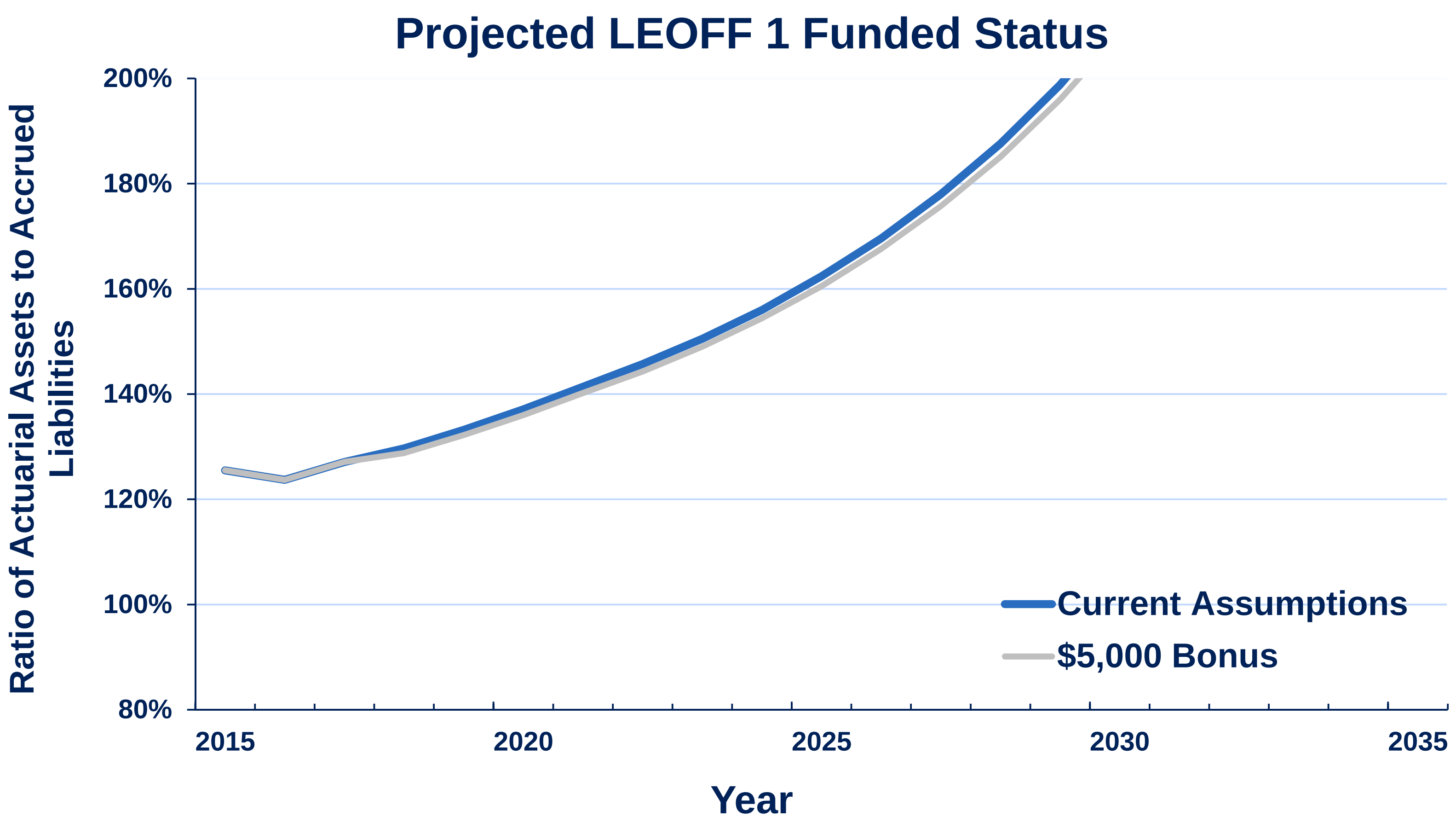
How We Arrive At Expected Return Impacts Funded Status

- Average annual investment return of 7.7 percent, but achieving those returns with different paths (high-to-low and low-to-high)



Bonus Payment Lowers Funded Status By About 1 Percent

- Providing $5,000 bonus payment to each LEOFF 1 member consistent with SB 6668 and all experience matches expectations



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Comments On Scenario Analysis

- LEOFF 1 funded status remains above 100 percent under all scenarios
- There are other possible scenarios where LEOFF 1 would fall out of full funding
  - The CTF earns negative 6 percent for fiscal years ending June 30, 2017, and June 30, 2018, followed by 7.7 percent thereafter
  - The CTF earns an average of 4 percent for the next ten years followed by 7.7 percent thereafter
- Next section of presentation addresses possible scenarios with stochastic analysis

What Does Our Stochastic Risk Analysis Represent?

- Outcomes from scenario-based analysis highly dependent on scenarios selected
- Instead of scenario analysis, we typically perform “stochastic” analysis when analyzing risk
- We simulate 2,000 equally likely future economic environments
- We then record the resulting impacts to the retirement system for the next 50 years
- This allows us to present a fuller range of outcomes and quantify the “likelihood” of a given risk
  - Likelihood equals the number of occurrences observed, for a given risk measurement, divided by total number of simulated outcomes
  - The true or actual likelihood is rarely known

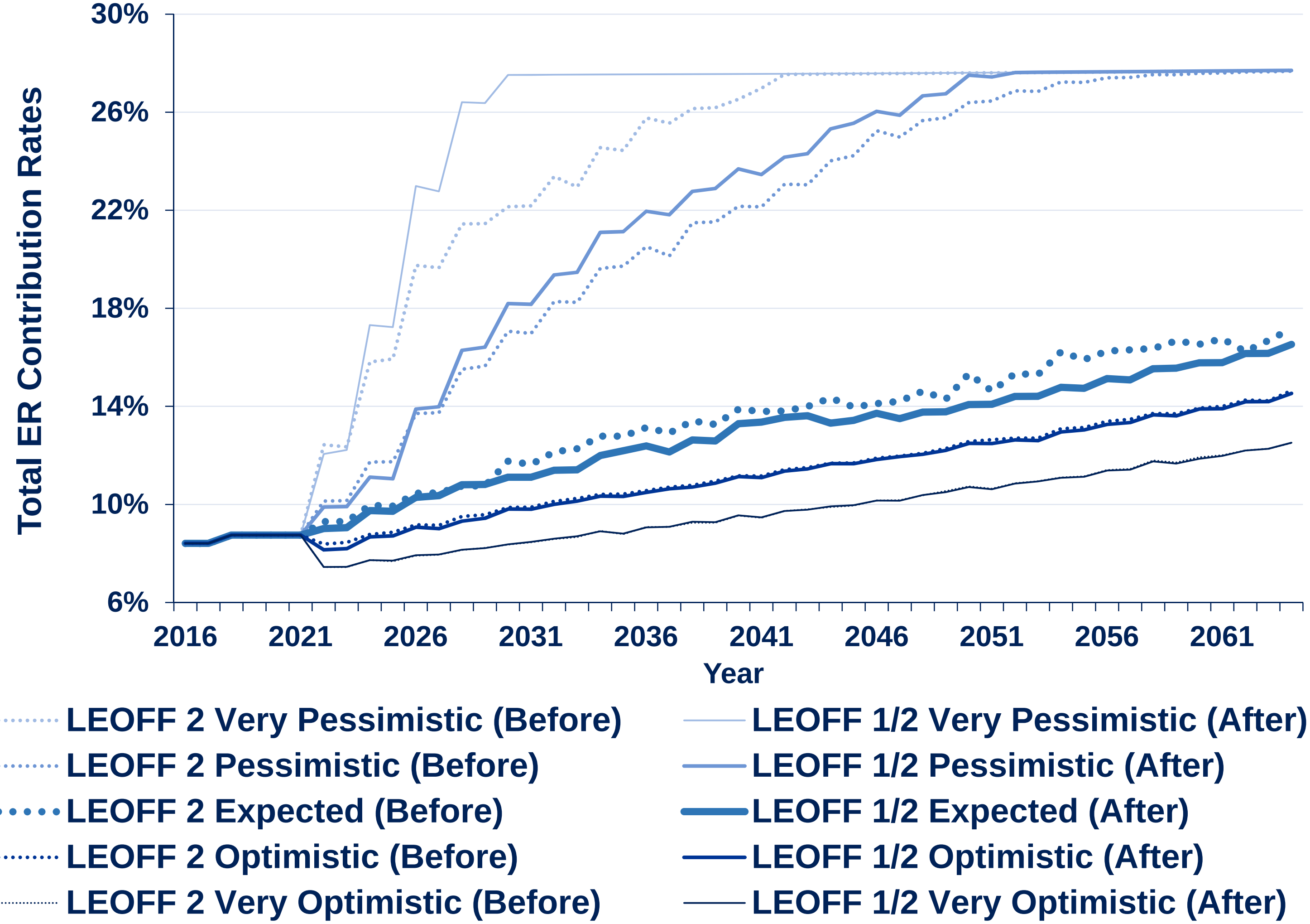
Components Of LEOFF 1/LEOFF 2 Merger

- Assets and liabilities of LEOFF 1 and LEOFF 2 combined into merged plan
- Long-term rate of return assumption is 7.5 percent
- Portion of expected LEOFF 1 surplus assets used to provide two-biennia state contribution rate holiday

Risk Analysis On LEOFF 1/LEOFF 2 Merger

- If future experience does not match expectations, primarily inflation and investment returns, certain risks can emerge
  - For instance, we see an increase in contribution rates and decrease in funded status under poor economic conditions
- The following graphs demonstrate under what scenarios this risk emerges, when, and for how long
- Please see the actuarial analysis report for more details and supporting information

Contribution Rates Increase After Merger Under Pessimistic Scenarios



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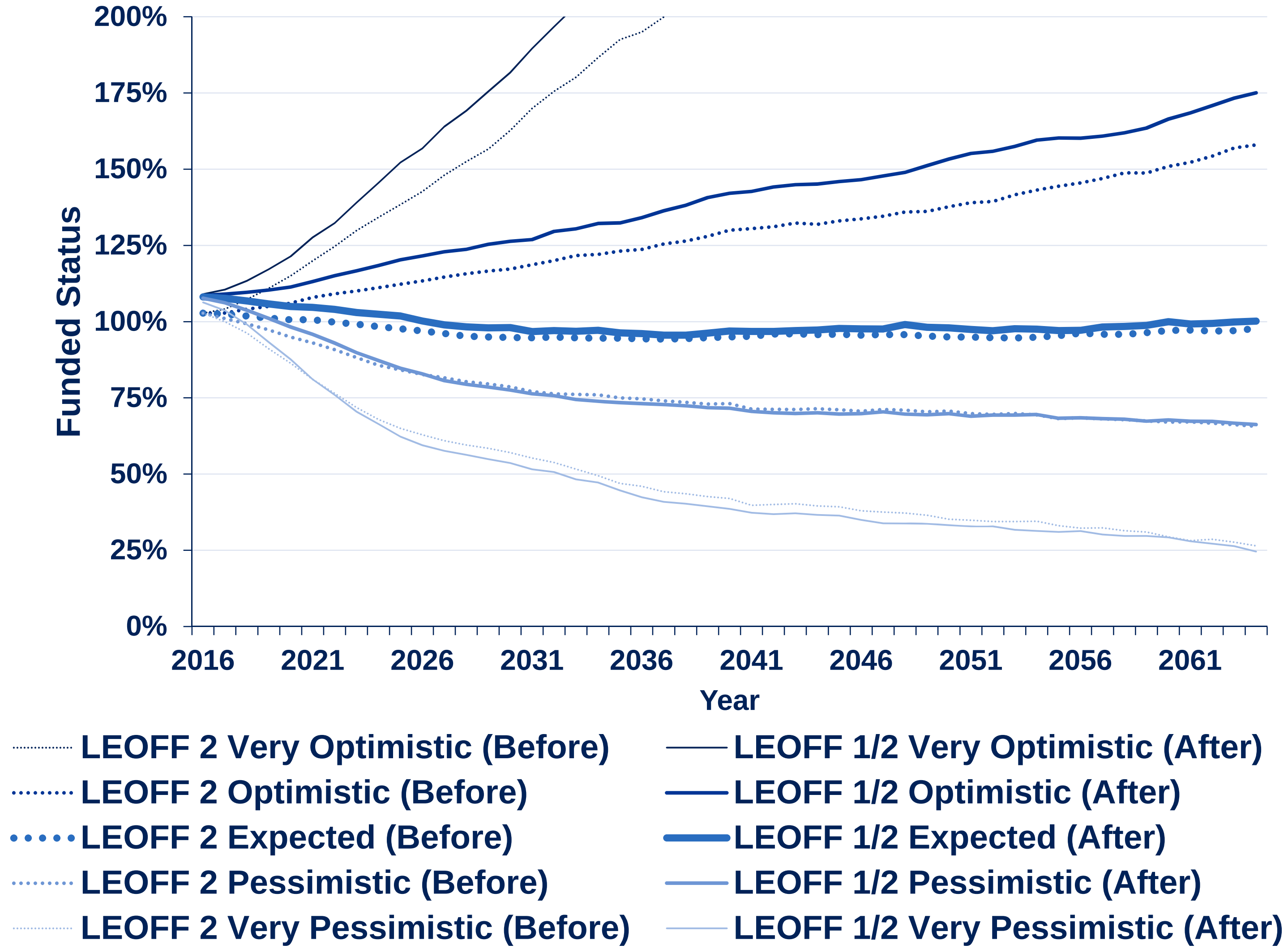
Funded Status Improves After Merger Under Expected and Optimistic Scenarios



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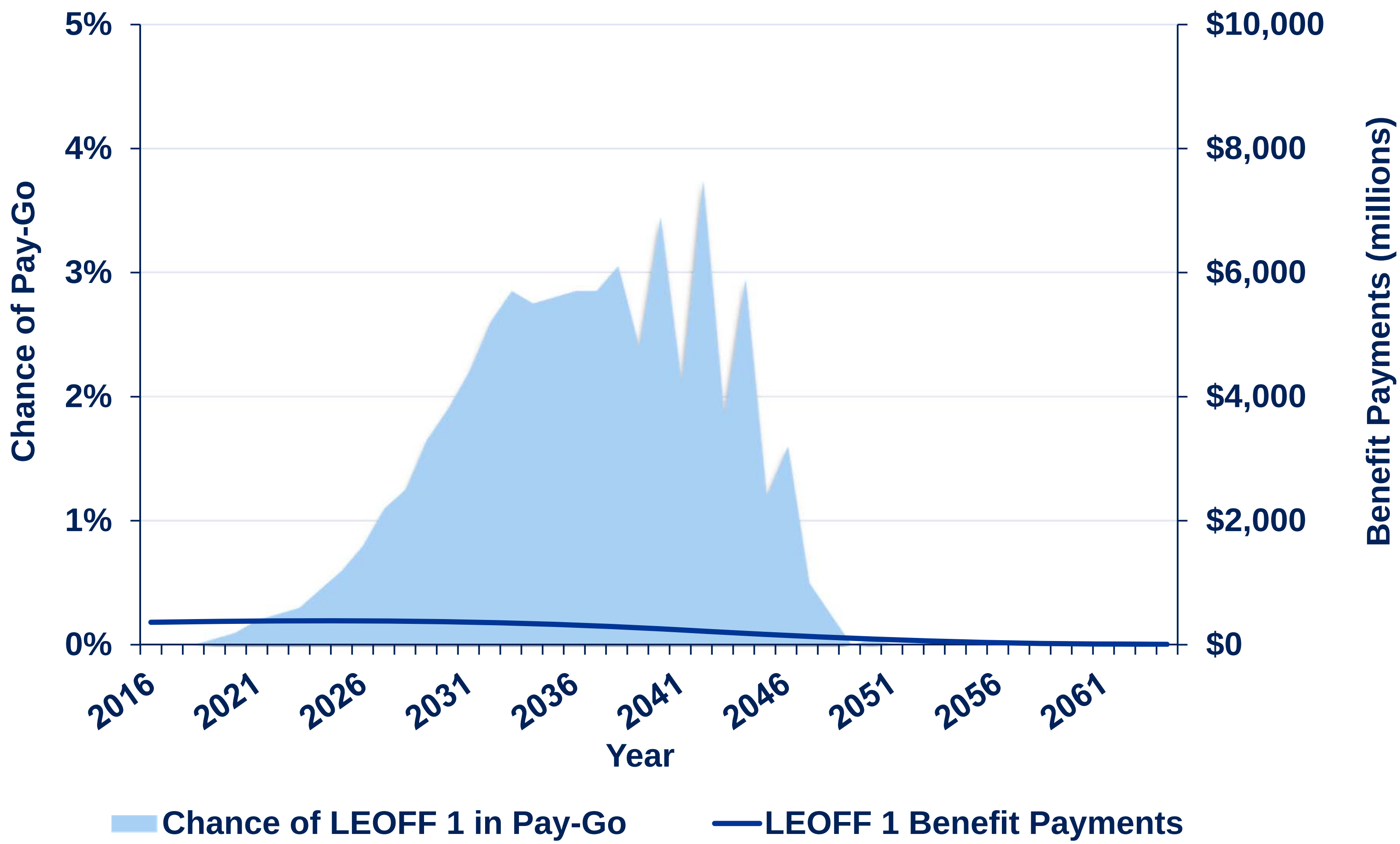
Pay-Go Risk Before And After Plan Merger

- Pay-go risk is the risk a plan's trust fund will exhaust before all benefits have been paid
- If this occurs and substantial benefit payments remain, it can represent a significant financial risk for affected employers
- Before a merger, LEOFF 1 has a maximum chance of pay-go of 4 percent in the year 2042 with about $220 million in annual benefit payments at that time
  - Assumes LEOFF 1 receives on-going funding after 2024, if necessary, similar to the funding method for PERS 1 and TRS 1
  - This is an assumption change we made from our prior risk analysis
- The following graphs show pay-go risk in LEOFF 1 and LEOFF 2 before merger and pay-go risk of the merged plan

4 Percent Chance Of Pay-Go In LEOFF 1 Before Merger



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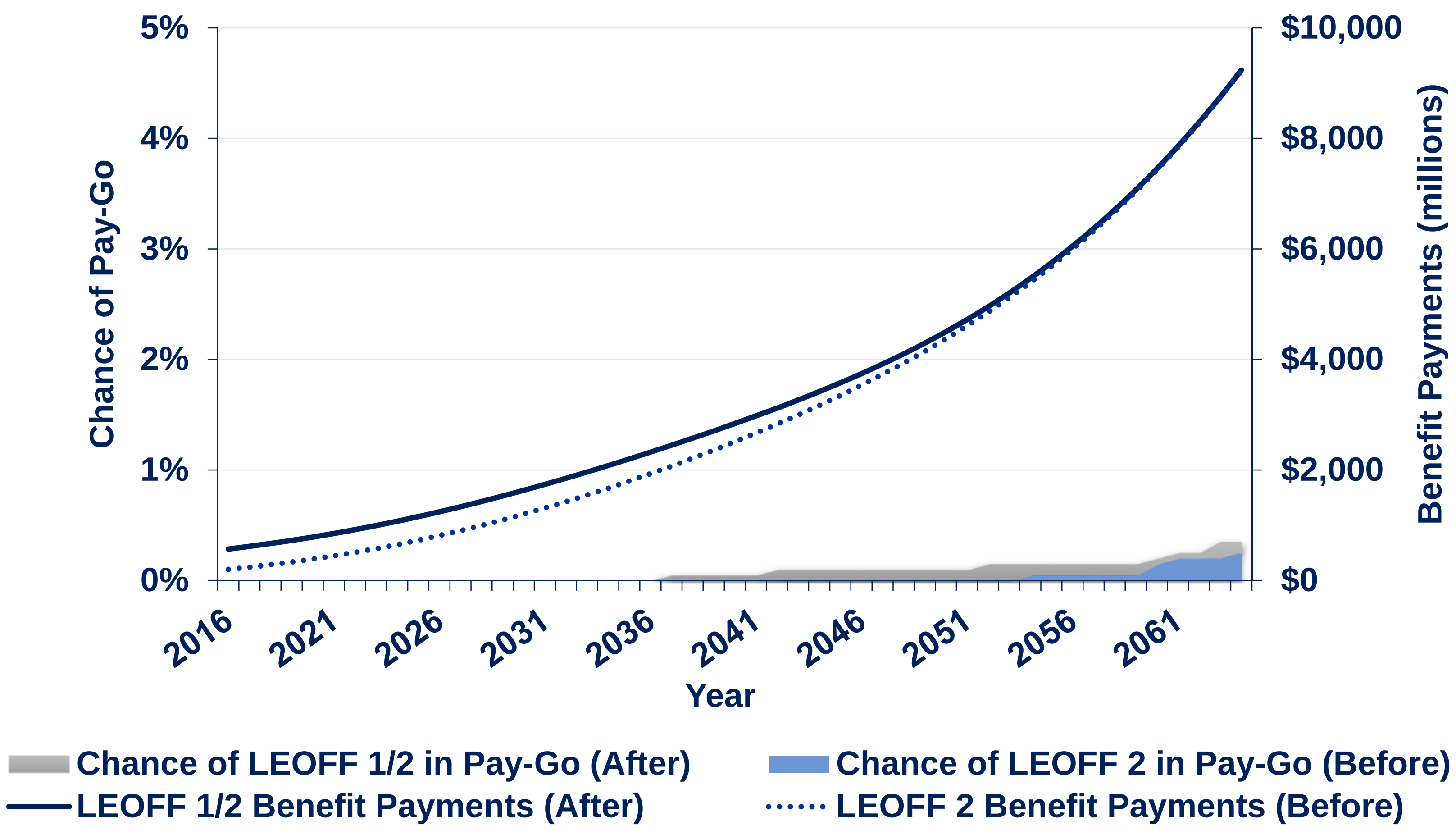
Less Than 0.5 Percent Chance Of Pay-Go In Merged Plan



Recap On Risk Analysis Of A LEOFF 1/ LEOFF 2 Merger

- LEOFF 2 contribution rates increase/decrease after the merger under pessimistic/optimistic scenarios
  - Merged plan has higher assets and obligations than before merger
  - With this larger base of assets and obligations, pessimistic/optimistic outcomes become more pessimistic/optimistic than before the merger
- Pay-go risk shifts after the merger
  - Chance of pay-go less than 0.5 percent and occurs after 2037
  - Chance of pay-go less than LEOFF 1 before merger but equal to or higher than LEOFF 2
- Results based on the data, assumptions, and methods from our most recent risk measurements under Past Practices
  - Future results may vary from these measurements
  - Pay-go doesn't occur under Current Law assumptions

Who Would Be Impacted If These Risks Materialize

- Risks can surface under current law or under proposed merger
- If these risks materialize under the merger, impacts would vary by affected group

Affected Group	Impact Under Funding Policy
LEOFF 1 Active Members	No contributions required under merger
LEOFF 1 Employers	Local government employers no longer responsible for funding LEOFF 1 retirement benefits
LEOFF 2 Members, Employers, and State	Share costs of the merged plan

Questions?

Appendix – Varying Investment Return Scenarios For LEOFF 1

Low-to-High and High-to-Low Returns		
FY	Low-to-High	High-to-Low
2017	6.88%	9.32%
2018	0.93%	7.41%
2019	7.35%	9.47%
2020	11.37%	5.58%
2021	(2.68%)	7.82%
2022	2.49%	11.60%
2023	0.65%	12.16%
2024	(1.51%)	10.34%
2025	19.62%	13.28%
2026	6.12%	20.71%
2027	9.45%	(3.47%)
2028	12.62%	11.81%
2029	4.71%	23.88%
2030	5.49%	1.49%
2031	17.59%	3.50%
2032	20.48%	(7.61%)
2033	4.92%	1.49%
2034	6.29%	7.70%
2035	10.68%	3.00%
2036	14.35%	8.99%
First 10 Years	4.93%	10.70%
Next 10 Years	10.53%	4.76%
All 20 Years	7.70%	7.69%