Merger Study – Actuarial Update

Matt Smith, FCA, EA, MAAA
State Actuary

Michael Harbour
Senior Actuarial Analyst

Presentation to Select Committee on Pension Policy

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Today's Update

- LEOFF 1 risk analysis requested by LEOFF 2 Board
- Risk analysis on SB 6668 (2017)
- Draft actuarial section of merger study included in materials

Actuarial Section Of Merger Study

- Transmittal letter
- Draft actuarial fiscal note for SB 6668 (2017)
- OSA presentations to SCPP this interim
- Responses to actuarial questions from stakeholders

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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 TRS 1 (or LEOFF 2) and vice versa depending on merger

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Sample Of Scenarios Requested By LEOFF 2 Board

- Different investment return and inflation environments
- Varying investment return scenarios
- Impact of providing $5,000 bonus payment

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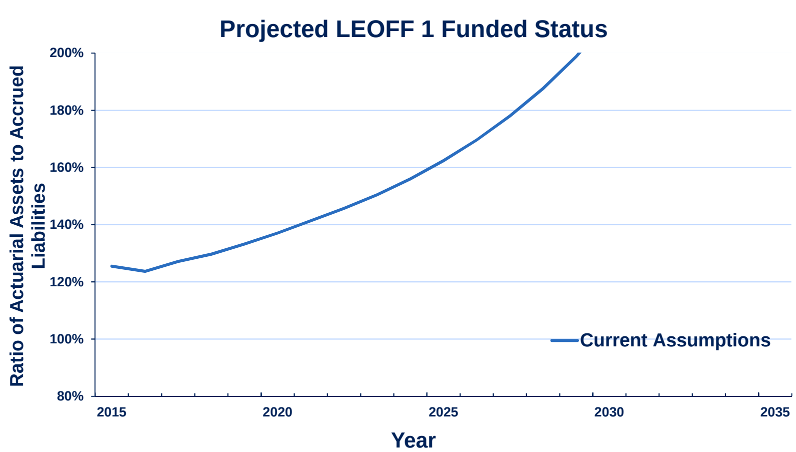
LEOFF 1 Funded Status Expected To Improve

- If fund earns 7.7 percent return each year



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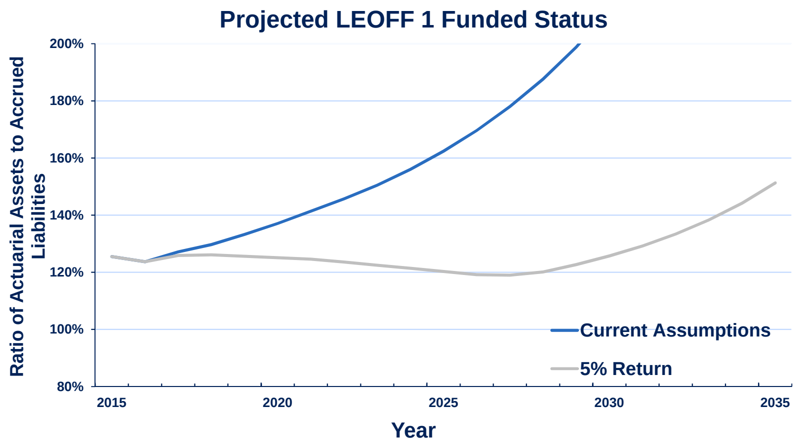
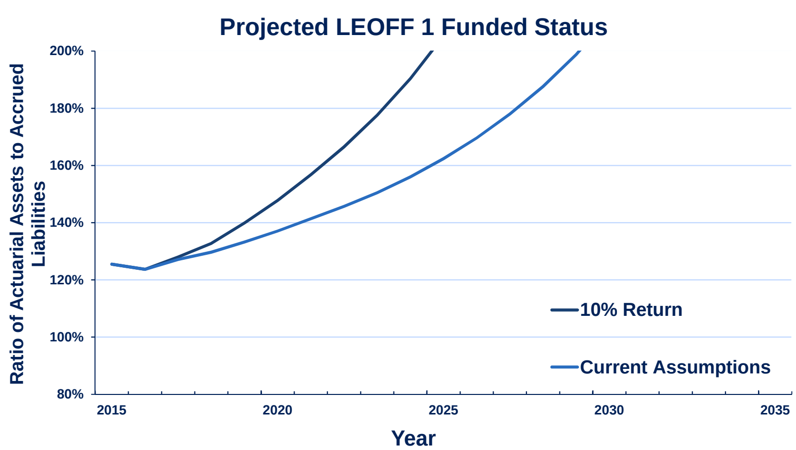
Funded Status Falls With Lower Than Expected Returns

- 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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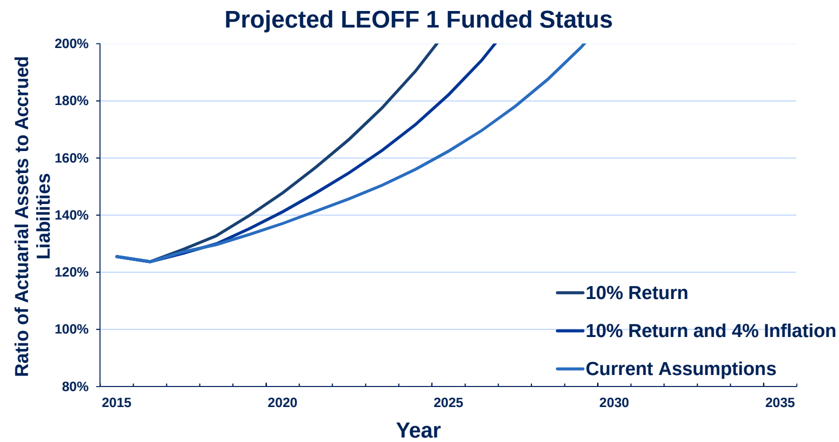
Higher Inflation Dampens Funded Status

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



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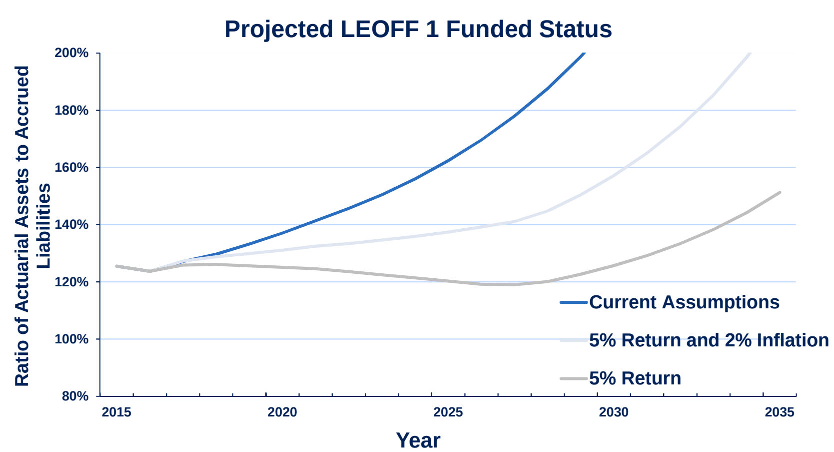
Lower Inflation Improves Funded Status

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



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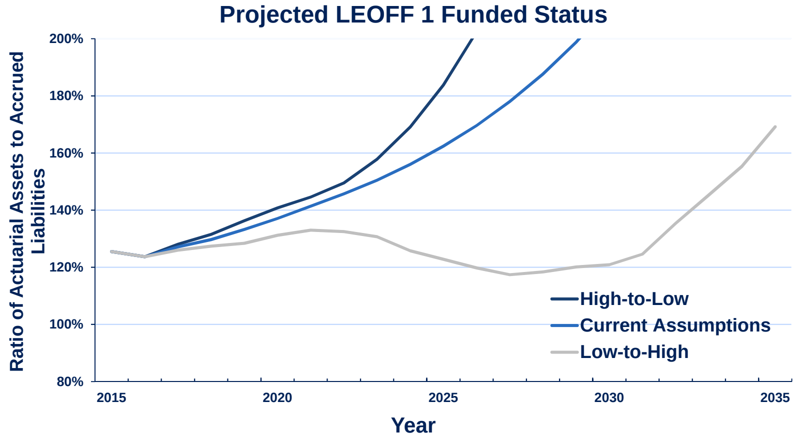
How We Arrive At Expected Return Impacts Funded Status

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



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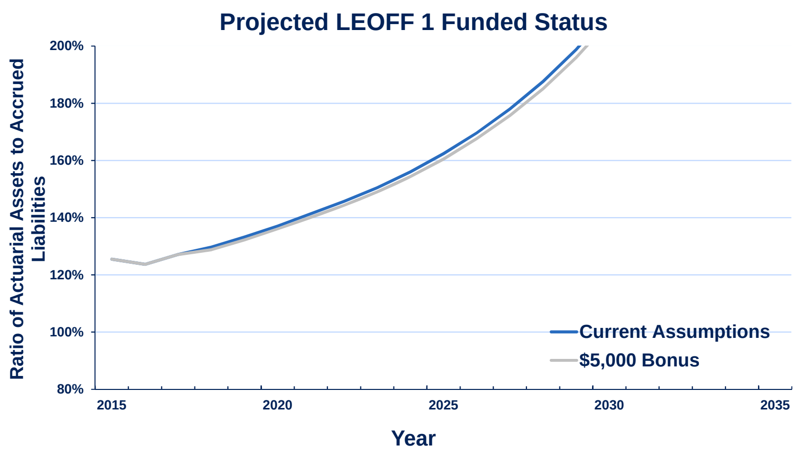
Bonus Payment Lowers Funded Status By About 1 Percent

- 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 Risk Analysis Requested By LEOFF 2 Board

- LEOFF 1 remains fully funded under all scenarios requested by the Board
- There are other possible scenarios where LEOFF 1 would fall out of full funding
- Next section of presentation addresses those possible scenarios

What Does Our 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 retirements systems 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

Risk Analysis On SB 6668 (2017)

- Reminder: SB 6668 (2017) represents SB 6668 from 2016 rolled forward one year and updated for 2015 actuarial valuation results
- Funding policy under SB 6668 would apply expected LEOFF 1 surplus to future contribution requirements of merged plan resulting in an expected long-term total employer savings
- If future experience does not match expectations, primarily inflation and investment returns, certain risks can emerge
  - For instance, you would see an increase in UAAL rates and more pay-go funding situations after the merger than before
- The following graphs demonstrate under what scenarios this risk emerges, when, and for how long
- Please see draft actuarial fiscal note for SB 6668 (2017) for more details and supporting information

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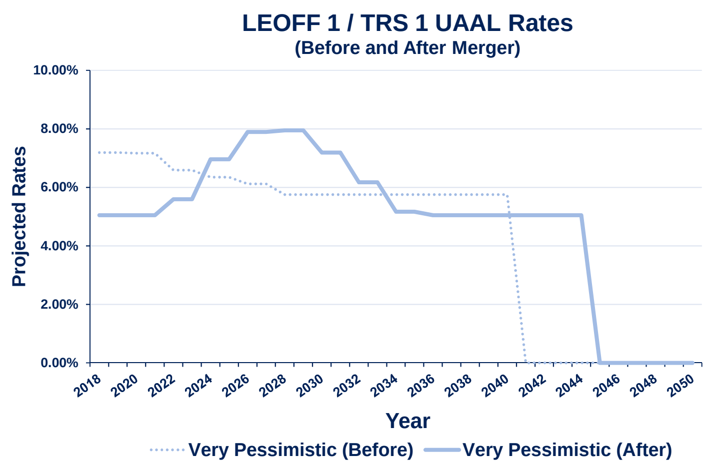
UAAL Rates Increase After Merger Under Very Pessimistic Scenarios



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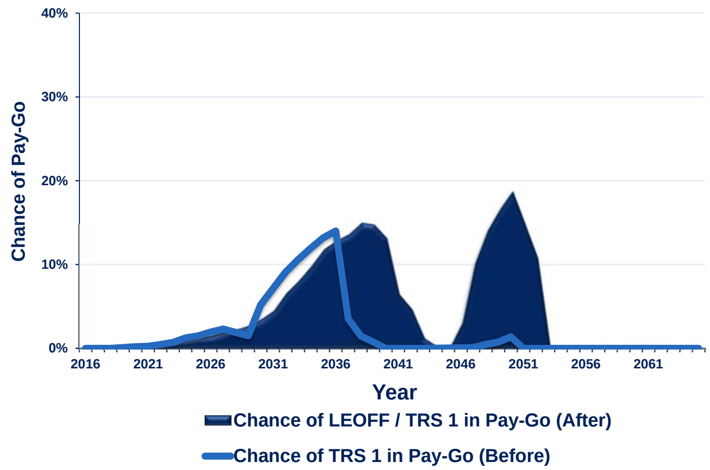
Pay-Go Risk

- Pay-go risk is the risk a plan's trust fund will exhaust before all benefits have been paid
- If this occurs and significant 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 $210 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
- Because TRS 1 assumes the assets and liabilities of LEOFF 1 under SB 6668 (2017), the following graphs compare TRS 1 before merger to the merged plan

14 Percent Chance Of Pay-Go In TRS 1 Before Merger

Pay-Go Risk Shifts And Increases After Merger



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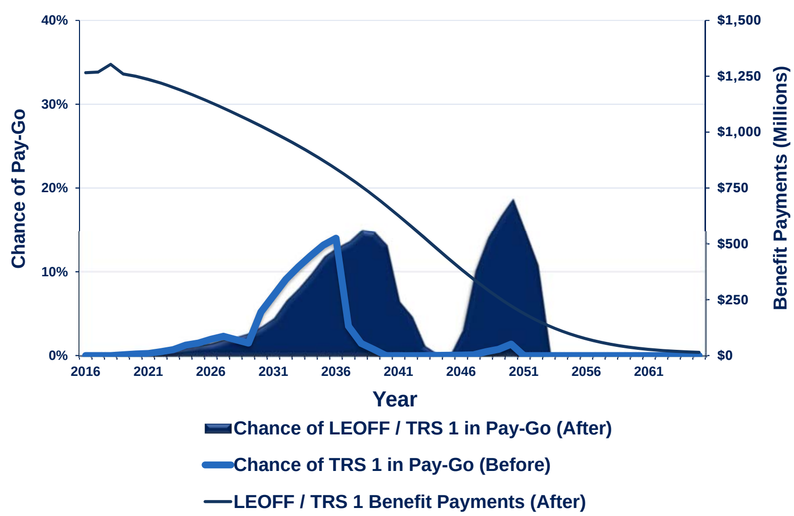
Largest Increase In Pay-Go Occurs Near End of Plan's Life



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Recap On Risk Analysis

- UAAL rates increase after the merger under very pessimistic 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
  - Very pessimistic or worse outcomes occur in 5 percent of the simulations in our model
- Pay-go risk shifts and increases after the merger
  - Initial infusion of LEOFF 1 surplus assets insulates the merged plan from some very pessimistic outcomes in earlier years of the projection
  - When those very pessimistic outcomes continue, the merged plan can face increased pay-go situations near the end of plan's life due to higher combined benefit payments from the merger
- Results based on the data, assumptions, and methods from our most recent risk measurements
  - Future results may vary from these measurements

Who Would Be Impacted If These Risks Materialize

- Risks identified with SB 6668 (2017) 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
TRS 1 Active Members	Contribution rate fixed at 6 percent before and after merger
LEOFF 1 Employers	Local government employers no longer responsible for funding LEOFF 1 retirement benefits
TRS Employers/GF-S	Assume all costs of the merged plan

Risk Management Considerations

- If Legislature decides to pursue SB 6668 (2017), the following changes could reduce some of the risks noted in this presentation

Provision	Possible Change To Reduce Risk
Fixed UAAL Rates	Eliminate or shorten the period of fixed rates under the proposal. This would allow for more responsive and adequate funding should the need arise.
Minimum UAAL Rates	Increase the minimum UAAL rates under the proposal. The current minimum UAAL rate for TRS 1 is 5.75%. The minimum UAAL rate for the merged plan is 5.05%. Because the merged plan has larger combined benefit payments than TRS 1, the merged plan may require higher minimum rates to accommodate the higher risk associated with the added benefit payments.

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%

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