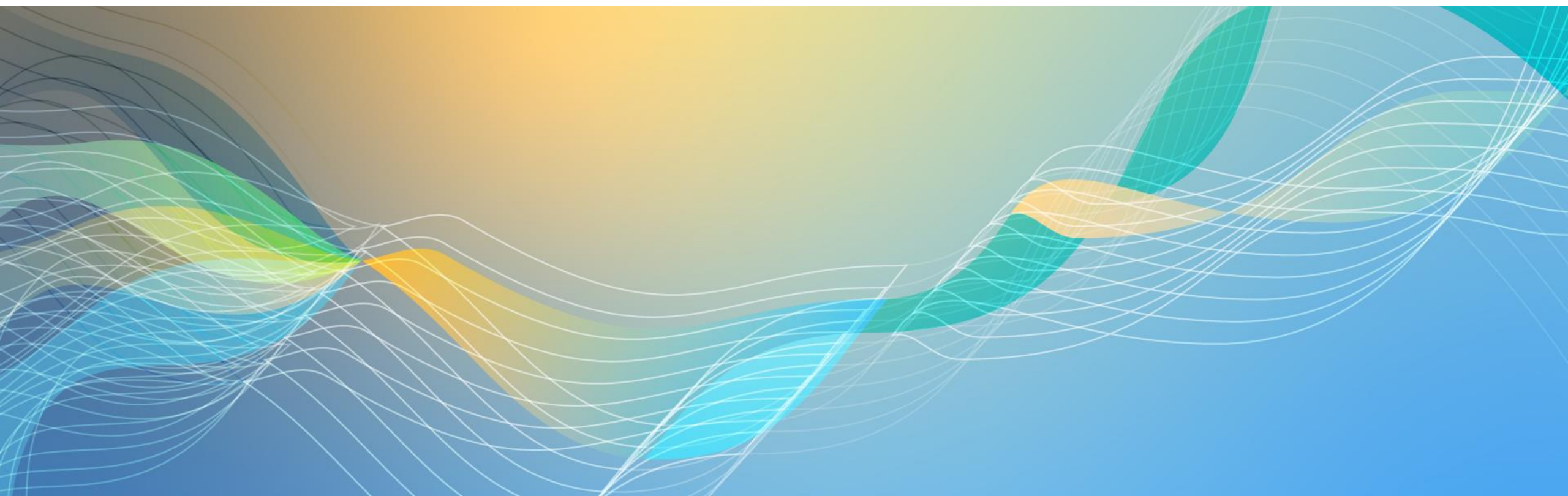


Actuarial Audit of Demographic Experience Study

Milliman Presentation for Law Enforcement
Officers' and Fire Fighters' Plan 2 Retirement Board

R. Ryan Falls, FSA, EA, MAAA
Scott Preppernau, FSA, EA, MAAA

DECEMBER 17, 2025



Agenda

Introduction of New Milliman Team

Engagement and Upcoming Workplan

Demographic Experience Study Process

Actuarial Audit Conclusion and Observations



Milliman Team



Ryan Falls
FSA, EA, MAAA
Co-Primary Actuary

- Over 25 years of experience
- Based in Dallas, TX
- Specialize in consulting with large statewide retirement systems
- Led 10 actuarial audits over the past three years



Scott Preppernau
FSA, EA, MAAA
Co-Primary Actuary

- Over 20 years of experience
- Based in Portland, OR
- Clients include large state and municipal retirement systems
- Five actuarial audits over the past three years



Gary Deeth
ASA, EA, MAAA
Secondary Actuary

- Over 15 years of experience
- Based in Portland, OR
- Leads teams of actuarial analysts in actuarial valuations and actuarial audits for defined benefit pension plans



Daniel Wade
FSA, EA, MAAA
Peer Review and Support Actuary

- Over 25 years of experience
- Based in Seattle, WA
- Performs actuarial valuations and actuarial audits for defined benefit pension and retiree medical plans.

Engagement and Upcoming Workplan

Engagement

State of Washington is required (RCW 41.45.110) to administer a biennial actuarial audit of the actuarial valuations used for employer and member rate-setting purposes as well as an actuarial audit of the periodic experience studies prepared by the Office of the State Actuary (OSA)

- Engagement also includes actuarial support upon request by the Pension Funding Council (PFC) or the LEOFF 2 Board
- Milliman has served as the independent actuarial auditor since 2013
- Recently selected to continue providing these services for up to six more years

Upcoming Workplan

Project	Timeline
Demographic Experience Study Audit	August 2025 – December 2025
June 30, 2025 Actuarial Valuation Audit	March 2026 – July 2026
June 30, 2027 Actuarial Valuation Audit	March 2028 – July 2028
June 30, 2029 Actuarial Valuation Audit	March 2030 – July 2030

Demographic Experience Study Process

Governance Over Assumptions

Washington State Code requires periodic actuarial experience studies

- OSA conducts the actuarial experience studies and recommends assumptions to the PFC and LEOFF 2 Board
- Actuarial Standards of Practice No. 27, *Selection of Assumptions for Measuring Pension Obligations*, provides a framework for all actuaries recommending assumptions for actuarial valuations of pension plans
- State's independent actuarial auditor reviews the OSA's recommendations
- PFC and LEOFF 2 Board formally adopt assumptions to be used for subsequent actuarial valuations and measurements

Types of Assumptions

Economic Assumptions

- Inflation, interest rate, pay increases
- Generally based on forward-looking economic indicators (inflation forecasts, capital market assumptions, asset allocation, negotiated salary increases, etc.)

Demographic Assumptions

- Mortality, turnover, retirement, etc.
- Generally based on systems' actual experience, adjusted to reflect current trends and historical experience
- Very data intensive

Demographic Experience Study Process

OSA conducted Economic and Demographic Experience Studies during 2025

At September LEOFF 2 Board meeting, OSA presented:

- Recommendations from Economic Experience Study
- Preliminary results of Demographic Experience Study

Since that meeting, Milliman conducted the actuarial audit of Demographic Experience Study

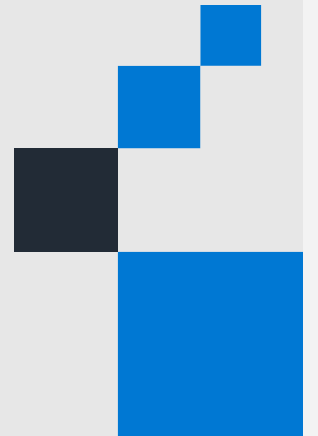
Project Steps	Dates
Kickoff meeting between Milliman and OSA	August 15
OSA provided draft summaries from their studies to Milliman	August 21
OSA provided Excel backup of their analyses to Milliman	Sept 8, Sept 30, Oct 16
Milliman reviewed OSA summaries and analyses	September thru November
Milliman and OSA met to discuss preliminary comments and observations	November 13
Milliman released draft actuarial report to OSA, DRS, and LEOFF2	December 5
Milliman presents comments and observations to LEOFF2 Board	December 17

Actuarial Audit Conclusion

Based on the summary information and accompanying methodology descriptions provided by the OSA, we believe that all the recommended assumptions are reasonable for use in the valuation.

We offer the following highlights, observations and recommendations that we believe would enhance the communication of the current experience study report and future demographic experience studies.

Note: The information we received from the OSA was in draft form; some observations from our audit report may not apply to the final OSA report.



Actuarial Audit Observations

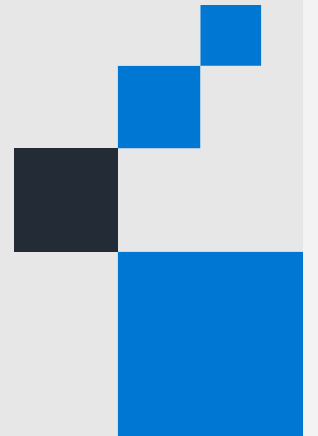
Highlights from Actuarial Audit

Detailed and Thoughtful Approach

- Summaries reveal a careful and thorough review process for the demographic assumptions
- Put thought into whether any aspect of an assumption's format or analytical process should be updated
- Considered the effect of unusual or outlier data during the study period (such as behavior affected by the COVID-19 pandemic or legislative changes)

Mortality Analysis

- Recommended update of the mortality tables to the Pub-2016 mortality tables issued by Society of Actuaries (SOA) in 2025 for public sector employees to be appropriate
- Ultimate rates of the SOA's MP-2021 mortality improvement scale is appropriate and aligned with historical data and the Actuarial Standards of Practice (ASOPs).
 - Long-term improvement scales result in reduced volatility in the liability.
 - Shift to benefits-weighted mortality analysis should help minimize actuarial gains/losses from mortality



Actuarial Audit Observations

Observations and Recommendations from Actuarial Audit

Consider focusing the review of potential mortality table adjustments on the analysis by each separate mortality assumption (i.e., employee, disabled retiree, healthy retiree or survivor)

- Consider presenting mortality experience not only on a combined system basis
- Consider combining experience across systems where warranted, for greater credibility of experience

May be helpful to establish a clear and consistent approach to the graphical display and discussion of the service-based salary assumption relative to the total salary growth assumption



Actuarial Audit Observations

Observations and Recommendations from Actuarial Audit (cont.)

Recent external circumstances have made it challenging to review retirement experience rates for the LEOFF 2 membership

- OSA applied professional judgment when selecting recommended updated retirement assumptions
- OSA's decision to use professional judgment is reasonable and consistent with the ASOPs
- We recommend continued monitoring of the assumption and emerging experience for retirement rates following SHB 1701





Thank you

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Scott Preppernau

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Actuarial Basis and Certification

This presentation summarizes results from our Actuarial Audit of the Demographic Experience study prepared for the State of Washington Pension Funding Council and LEOFF 2 Board. Please see the full report for a description of the assumptions, methods, data, reliance, and limitations related to our work.

This work product was prepared exclusively for the LEOFF 2 Board for discussion purposes only and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Any recipient of this work product who desires professional guidance should engage qualified professionals for advice appropriate to its own specific needs.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the OSA's staff. This information includes, but is not limited to, statutory provisions, historical plan experience, and summarized employee data. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the audit results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our conclusions may need to be revised.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions, and supporting Recommendations of the American Academy of Actuaries.

We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

