Milliman

LEOFF Plan 2 Retirement Board Actuarial Audit Meeting

Mark Olleman and Daniel Wade

June 22, 2016

Agenda

- Your Milliman Team
- History
- Our Approach
- Audit Process
- Reasonableness of Assumptions and Methodology
- Data and Assets
- Summary

Your Milliman Team

- Mark, Nick, and Daniel
  - Have worked for public plans for many years
  - Serve some of the nation's largest public plans

Daniel Wade

Mark Olleman

Nick Collier

History

- Proud to be working for one of Milliman's two oldest clients
  - When Wendell Milliman founded our firm in Seattle in 1947 the Washington State Employees Retirement System was a client.
- Second biennial valuation audit in 2016
  - First biennial valuation audit and experience study audit in summer 2014
    - Milliman opined that actuarial work was reasonable and appropriate
      1. Good matches on liabilities and contribution rates
      2. Package of assumptions was reasonable
      3. Recommended no change to 2013 valuation, but had recommendations for minor changes in methodology for future valuations and experience studies
- Third biennial valuation audit scheduled for summer 2018

How will Milliman approach the audit?

- Identify any concerns the LEOFF 2 Board may have
- Verify results independently
- Work cooperatively with OSA to improve work product
- Thorough analysis and evaluation of all material information:
  - Data
  - Processes
  - Reports
- Conformance with Actuarial Standards of Practice (ASOP)
  - There have been updates to ASOPs 4, 27, and 35 effective since prior valuation

How will Milliman approach the audit? *(continued)*

- Identify issues which may:
  - Cause a material difference in results
  - Result in improved communications
- Resolve issues
  - Discuss findings with State Actuary
  - Work with State Actuary to understand “why”
- Recognize that differences of opinion may exist in certain areas, particularly with respect to actuarial assumptions
- Communicate clearly to the Board any material areas in which our judgment differs from the State Actuary and explain “why”

Audit Process

- Goals
  - Verify financial condition of Plan is accurately reported
  - Evaluate actuarial communication
- Replication audit
  - Most comprehensive approach
  - All calculations are independently replicated based on the same census data, assumptions, and methodology

Audit Process *(continued)*

- Preliminary discussions with OSA
- Gather Necessary Information
- Data
  - Assess accuracy
  - Test for missing elements
  - Compare data provided by DRS to data used by OSA
- Review assumptions and methodology
  - Full review of experience study performed in 2014
- Actuarial Assets - Independent Replication

Audit Process *(continued)*

- Valuation Liability Calculations
  - Check Individuals
  - Perform full parallel valuation
  - Compare results to OSA
  - Reconcile differences
- Valuation Funding Calculations
  - Independent reconciliation of contribution rates
- Review of reports
  - Appropriate information and scope?
  - Easy to understand and find information?
  - Consistent with Actuarial Standards of Practice?

Where Differences May Occur

- Types of differences
  - Objective
    - Data
    - Benefits not reflected correctly
    - Assumptions not applied correctly
    - Application of cost method or smoothing method
  - Subjective
    - Based on actuary's judgment
    - Most often regarding assumptions
    - Discuss with State Actuary to understand "why?"
    - Explain "why" to the Board and put it in perspective

Reasonableness of Assumptions and Methodology - Mortality

- Two parts
  - Base table: What is the probability today of living another year?
  - Improvement scale: People are living longer. How much longer will they live?
- Base table
  - Reviewed with experience study
  - Suggested benefit-weighted approach and other refinements to methodology to be incorporated with next experience study. Refinements were not expected to materially change recommendation for base table in 2014.
- Improvement scale
  - Fully generational Scale BB used
  - Scale BB was released in 2012, replacing Scale AA from 1995.
  - Scale BB is based on Social Security data from 1950 – 2007.
  - Scale BB was tested to be consistent with two large public plans.
  - Milliman believes this is reasonable and sees no need to update at this time.

Future Mortality Improvement *(additional detail)*

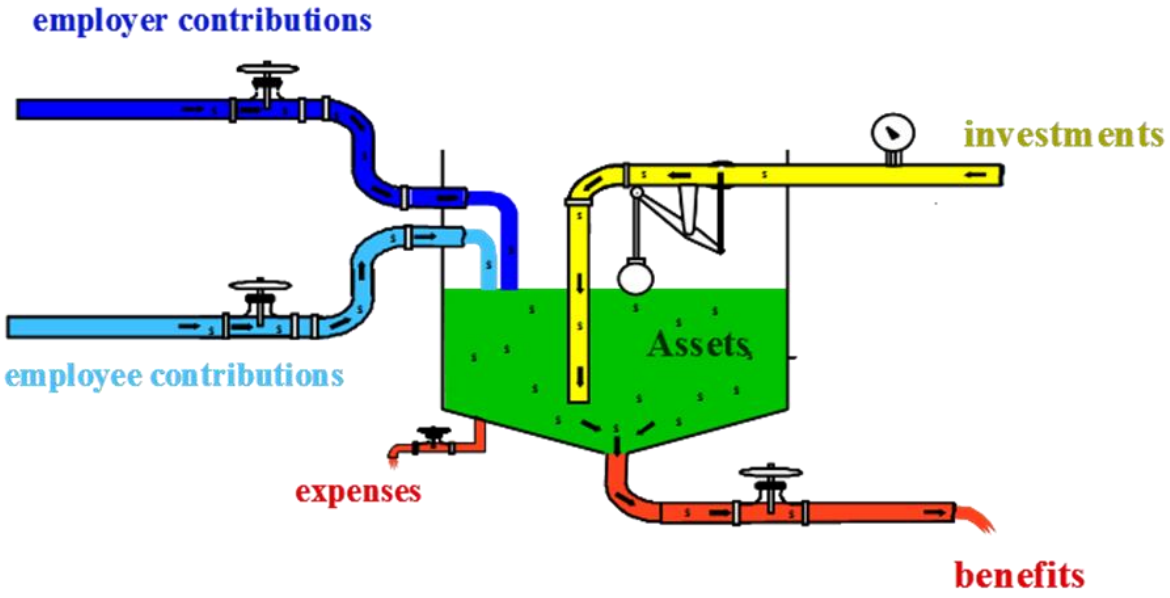
- No one knows how rapidly mortality will improve in the future
- There are many reasonable assumptions
- Retirement Plans Experience Committee (RPEC) of the Society of Actuaries (SoA)
  - Released Scale MP-2014 in October 2014, increased short-term mortality improvement
  - Released Scale MP-2015 in October 2015, pulled back on short-term mortality improvement
  - Two-dimensional to allow for disparate improvements by age and calendar year. Additional precision may not lead to additional accuracy.
- Research shows:
  - Scale BB is consistent with long-term national improvements
  - Compared to Milliman's calculations with Social Security Data Scale BB is generally:
    - lower than 1999 – 2009 improvement, and
    - higher than 1990 – 2000 improvement.
  - Scale BB is lower improvement than CalPERS experience from 1997 – 2011
  - Actual improvement lower in 2010 and 2011 vs. longer-term history
  - Preliminary data from Centers for Disease Control indicated an ***increase*** in death rates in 2015, i.e. negative mortality improvement.

Future Mortality Improvement *(additional detail)*

- Other Public Retirement Systems
  - Generational Mortality Projection
    - Full Scale AA generationally: Idaho, Seattle, Tacoma, Utah
    - Full Scale BB generationally: Oregon, Wyoming
  - Differing Static Mortality Projections
    - CalPERS, CalSTRS, Montana PERS, Montana TRS, Colorado
- Private Plans generally use IRS mandated static projections based on Scale AA for IRS requirements, but using MP-2015 for accounting purposes.

Reasonableness of Assumptions and Methodology – Actuarial Cost Method

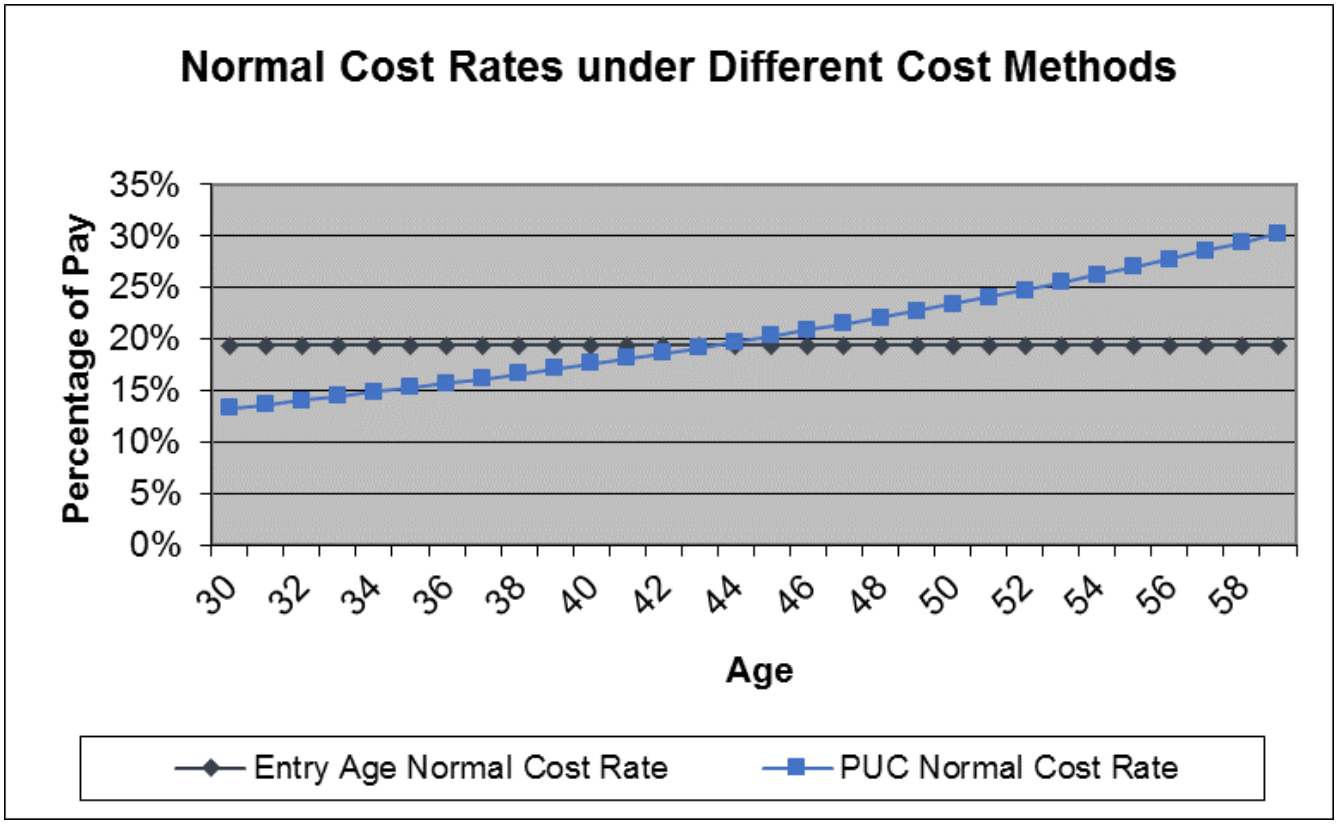
- **Aggregate Normal Cost** equals the level % of projected pay to fund the difference between the present value of projected benefits and the actuarial value of assets.
  - All projected contributions go in one bucket, and are
  - spread evenly over the projected value of future salaries.
  - There is no Unfunded Actuarial Accrued Liability (UAAL).
- Gains and losses cause the Aggregate Normal Cost to go up and down.



Reasonableness of Assumptions and Methodology – Actuarial Cost Method

- Aggregate NC spreads all future contributions evenly over projected salaries
  - Good for agency risk
    (cost of benefits is not pushed into the future)
  - Excellent for demographic matching
    (cost is matched to salaries of members earning benefits)
- No funded ratio is calculated under Aggregate Cost Method (no UAAL)
  - Entry Age actuarial cost method is used for calculating the funded ratio.
    Previously, Projected Unit Credit (PUC) actuarial cost method was used.
- Entry Age actuarial cost method
  - Entry Age Normal Cost is the **level % of pay** that will fund a member's benefit if paid over his or her **entire career**.
    - Equals expected annual cost (if all actuarial assumptions came true)
    - Very stable
  - Unfunded Actuarial Accrued Liability (UAAL) = future required contributions not the covered by future Normal Costs. All gains and losses go into the UAAL.
  - Entry Age is the most common method used in the public sector
  - Entry Age recently required for financial reporting.
  - Entry Age typically results in higher calculated liabilities compared to PUC.

Reasonableness of Assumptions and Methodology – Actuarial Cost Method General Illustration



LEOFF Plan 2 Funding Policy

- Currently paying fixed rates equal to 100% of the Entry Age Normal Cost
- Temporary funding policy through June 30, 2019
- Considerations
  - Increases short term rate stability (and possibly long term)
  - Provides some margin for adverse experience
  - Avoids contributions less than expected long term cost of benefits
  - Requires consistent monitoring to maintain proper funding since contributions do not automatically adjust to:
    - Experience different than assumed
    - Assumption changes

Reasonableness of Assumptions and Methodology – Investment Rate of Return

- Actuarial Standard of Practice requires not significantly optimistic or pessimistic
- Modeled expected return
  - Net of expenses
  - Used WSIB's target asset allocation
  - Based on Milliman's 12/31/2015 capital market assumptions, we projected a long-term median return of 6.90% per year (inflation assumption of 2.30%)
  - Other capital market assumptions could be used, including WSIB's from which OSA calculated a median 7.74% expectation (inflation assumption of 3.00%)
  - If Milliman's capital market assumptions are adjusted for an inflation assumption of 3.00% instead of 2.30%, the result is 7.60%
- Bottom Line
  - The 7.50% recommendation is reasonable

Interactions with OSA so Far

- Very professional
  - Open discussion of issues
  - Receptive to different ideas
  - Incorporating suggestions from 2014
  - Schedule set up by OSA and used to track progress
  - Advance notice of any changes
  - All requested information provided in a timely manner

Membership Data

- Reviewed data supplied by DRS
  - Reviewed for reasonableness
  - Confirmed that all necessary information was included
- Reviewed data used in OSA's valuation
  - Performed independent data editing
    - Edits made for outliers and salary adjustments made for members with less than one year of service.
    - Compared to preliminary participant data summary posted on OSA's website.
  - Conclusion
    - Data used by OSA in valuation looks very good.

Membership Data *(continued)*

LEOFF 2		OSA		Milliman	Ratio OSA/Milliman
Active Members					
Total Number		17,019		17,019	100.0%
Total Salaries (millions)	$	1,743	$	1,743	100.0%
Average Age		43.6		43.7	99.8%
Average Service		14.7		14.7	100.0%
Average Projected Compensation	$	102,411	$	102,434	100.0%
Retirees and Survivors					
Total Number		3,710		3,710	100.0%
Average Monthly Pension	$	3,529	$	3,529	100.0%
Terminated Members					
Total Number Vested		785		785	100.0%
Total Number Non-Vested		1,693		1,693	100.0%

Actuarial Value of Assets

- Smoothing method
  - Layered recognition of gains and losses, with length of recognition based on deviation from expectation (maximum of eight years)
  - Data provided by WSIB and DRS
    - Totals and breakdown by Plan taken from DRS data
    - Monthly cash flows taken from WSIB data.
- Independent calculation by Milliman based on sources of data
- Asset method and calculations are reasonable

Actuarial Value of Assets *(continued)*

AVA (millions)					
		OSA		Milliman	Ratio OSA/Milliman
LEOFF					
Plan 2	$	9,335	$	9,333	100.0%

Actuarial Liabilities

- In progress.

Summary

- Audit is in progress.
- Approach
  - Independent verification of results
  - Work cooperatively with OSA to improve work product
  - If any material differences exist, communicate “why” to the Board
- Positive interactions with OSA so far
- Does the Board have any specific issues Milliman should address?

Your Questions?

Caveats and Disclaimers

Milliman's work product was prepared exclusively for the LEOFF 2 Board for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning OSA and DRS operations, and uses DRS data, which Milliman has not audited. It is not for the use or benefit of any third party for any purpose. Any third party recipient of Milliman's work product who desires professional guidance should not rely upon Milliman's work product, but should engage qualified professionals for advice appropriate to its own specific needs.

Milliman

Thank you

Contact information