

Pension Funding Council

Actuarial Audit

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Agenda

- Your Milliman Team
- Our Approach
- Audit Process
- Interactions with OSA
- Preliminary Observations
- Summary



Your Milliman Team

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



Daniel Wade



Mark Olleman



Nick Collier

How will Milliman approach the audit?

- Identify any concerns the PFC 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



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 PFC 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

Audit Process *(continued)*

- Experience Study
 - Review assumptions and cost methods
 - Economic assumptions
 - Demographic assumptions
 - Consistency with Actuarial Standards of Practice
 - Professional judgment
 - Compare to other systems

Audit Process *(continued)*

- Actuarial Assets - Independent Replication
- Valuation Liability Calculations
 - Check Individuals
 - Perform full parallel valuation
 - Compare results to OSA
 - Reconcile differences
- Valuation Funding Calculations
 - Independent reconciliation of contribution rates

Audit Process *(continued)*

- Review of reports
 - Appropriate information and scope?
 - Easy to understand and find information?
 - Consistent with Actuarial Standards of Practice?

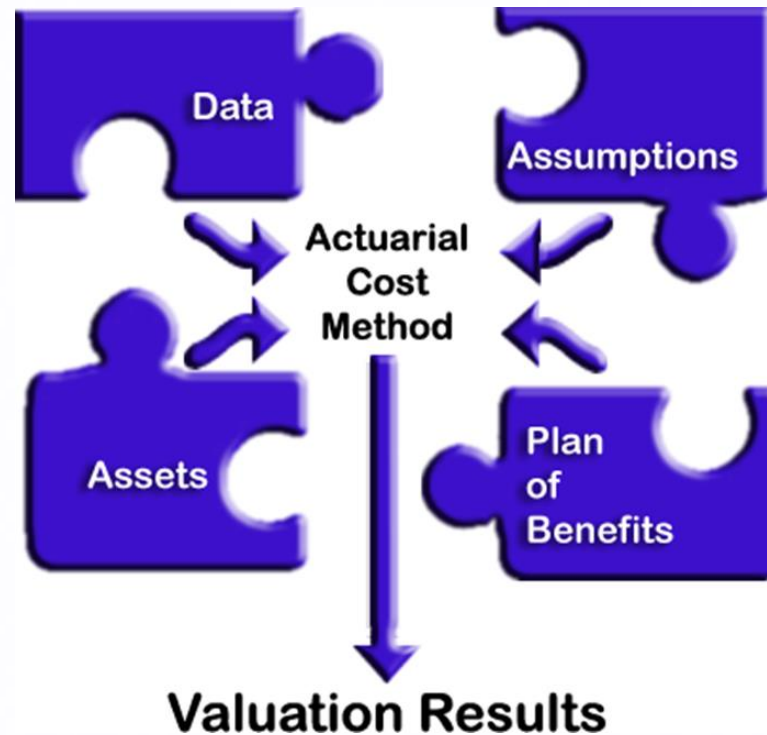
Where Differences May Occur

- 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 PFC and put it in perspective

Interactions with OSA so Far

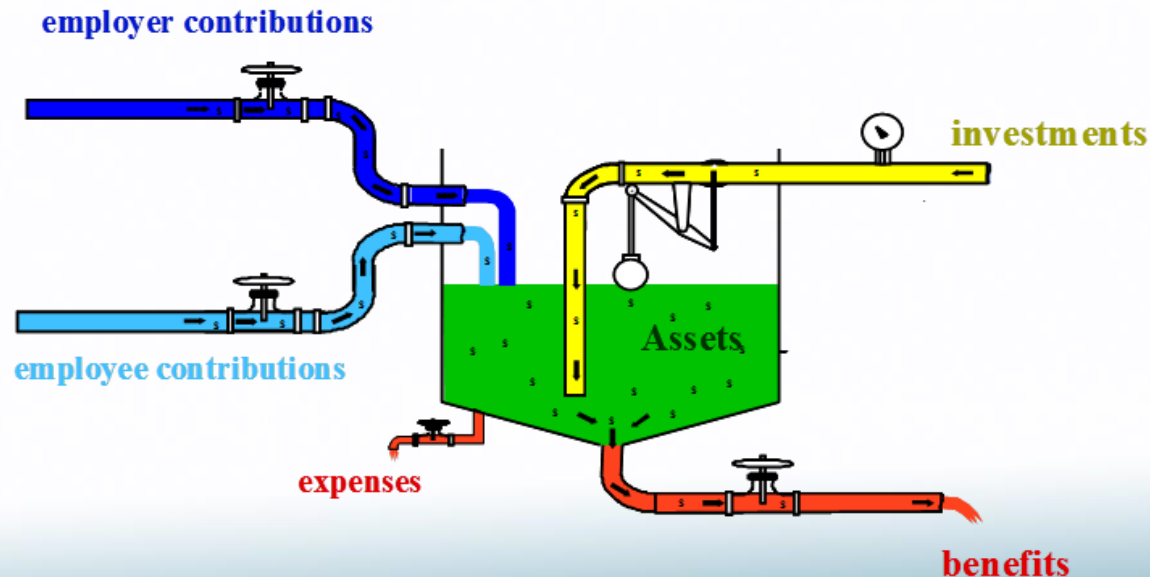
- Very professional
 - Open discussion of issues
 - Receptive to different ideas
 - Schedule set up by OSA and used to track progress
 - Advance notice of any changes
 - All requested information provided in a timely manner

PRELIMINARY OBSERVATIONS



Aggregate 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.
- Gains and losses cause the normal cost to go up and down.



Aggregate Cost Method

- Does not calculate liability independent of the assets, however OSA uses Projected Unit Credit to accomplish that.
- Conference of Consulting Actuaries Draft White Paper classifies Aggregate as “Acceptable” if supplemental calculations disclose additional information. If not, then “Acceptable with conditions.”
- All projected future contributions spread 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)

Conference of Consulting Actuaries (CCA)

Draft White Paper

- “Actuarial Funding Policies and Practices for Public Pension Plans”
- Response to the void left by GASB no longer specifying parameters for an ARC (Annual Required Contribution)
- Composed by a group of public plan actuaries from the major firms in public plan practice who met more than 24 times over two years.
- Sets out policy objectives and classifies practices for the three major components of funding policies (a) cost methods (b) asset methods and (c) amortization methods.
- Final scheduled for release July, 2014

Conference of Consulting Actuaries (CCA)

Draft White Paper *(continued)*

- Level Cost Allocation Model (LCAM)
- Classifications
 - LCAM Model practices
 - NOT “Best Practices”
 - Usually one practice most consistent with the Level Cost Alloc. Model
 - Acceptable Practices

“well established in practice and typically do not require additional analysis to demonstrate their consistency with general policy objectives.”
 - Acceptable with Conditions – require additional analysis
 - Non-recommended Practices

adopt only with acknowledgement of identified policy concerns or with understanding they reflect different policy objectives
 - Unacceptable Practices

Asset Method

- OSA Asset Method
 - Smooths losses based on size of gain or loss. Examples
 - If actual return within 1% of assumption – immediate recognition
 - If actual return more than 7% above or below assumption – 8 years
 - Must be inside 70% to 130% of Market Value Corridor
- OSA is almost inside of CCA Model Practice:
 - 5 or fewer years with 50% - 150% corridor, OR
 - 7 years or less with 60%/140% corridor
- OSA satisfies CCA Acceptable Practice:
 - 10 years or less with 70%/130% corridor
- Other systems
 - 5 year smoothing is most common
 - Unusual to consider the size of the gain or loss

Asset Method *(continued)*

- OSA Asset Method satisfies all CCA Policy Objectives:
 - Policy specifies all components of Asset Method
 - Unbiased relative to market
 - Does not selectively reset at market when market > actuarial
 - Unbiased relative to realized and unrealized gains and losses
 - Satisfies ASOP No. 44 (Actuarial Standard of Practice):
 - Likely to return to market value in a reasonable period, and
 - Likely to stay within a reasonable range of market.
 - Parameters reflect empirical experience from historical market volatility
 - Support the policy goal of demographic matching

Mortality

- Two parts
 - Base table: What is the probability today of living another year?
 - Improvement scale: People are living longer. How much longer?
- Base table
 - Milliman is finalizing review of OSA's work. Multiple discussions.
 - OSA found members with larger benefits are living longer. In conjunction with excluding non-retired lives this did not change the results but the method will be incorporated into future studies.
- Improvement scale
 - OSA is recommending Scale BB.
 - 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.

Future Mortality Improvement *(additional detail)*

- No one knows how rapidly mortality will improve
- There are many reasonable assumptions
- Preliminary research shows
 - Scale BB is consistent with long-term national improvements
 - Scale BB is lower than recent national improvements and also lower than CalPERS experience from 1997 - 2011
 - Milliman is continuing to research
- Other Public Retirement Systems
 - Have generally not gone past Scale AA yet
 - Generational Mortality Projection
 - Half Scale AA generationally: Washington
 - Full Scale AA generationally: Oregon, Idaho, Seattle, Tacoma, Utah
 - Full Scale BB generationally: Wyoming
 - Differing Static Mortality Projections
 - CalPERS, CalSTRS, Montana PERS, Montana TRS, Colorado

(Private Plans generally use IRS mandated static projections for both IRS and accounting purposes.)

Direct Rate Smoothing

- Some retirement systems phase-in the impact of assumption changes on contribution rates.
 - Instead of phasing in assumptions
 - Funding ratios are based on best estimate assumptions
 - Generally referred to as “Direct Rate Smoothing”
- Conference of Consulting Actuaries Draft White Paper
 - Says direct rate smoothing is preferable to assumption phase-in
 - Classifies “acceptable” practice as the shorter of: the time period to next scheduled assumption review, or five years.

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)

All Plans			
	OSA	Milliman	Ratio OSA/Milliman
<i>Active Members</i>			
Total Number	291,345	291,345	100.0%
Total Salaries (millions)	\$ 16,525	\$ 16,525	100.0%
Average Age	47.7	47.7	100.0%
Average Service	12.4	12.4	100.0%
Average Projected Compensation	\$ 56,710	\$ 56,715	100.0%
<i>Retirees and Survivors</i>			
Total Number	150,145	150,140	100.0%
Average Monthly Pension	\$ 1,803	\$ 1,800	100.2%
Number of New Service Retirees	9,474	9,490	99.8%
Avg Monthly Pension for New Svc Retirees	\$ 1,792	\$ 1,786	100.4%
<i>Terminated Members</i>			
Total Number Vested	53,356	53,361	100.0%
Total Number Non-Vested	118,332	118,333	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.
 - End of Year total market values do not perfectly match between the two sources
- 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
PERS			
Plan 1	\$ 8,053	\$ 8,052	100.0%
Plan 2/3 (DB)	\$ 24,335	\$ 24,333	100.0%
TRS			
Plan 1	\$ 6,717	\$ 6,716	100.0%
Plan 2/3 (DB)	\$ 8,406	\$ 8,405	100.0%
SERS			
Plan 2/3 (DB)	\$ 3,335	\$ 3,335	100.0%
PSERS			
Plan 2	\$ 224	\$ 224	100.0%
LEOFF			
Plan 1	\$ 5,516	\$ 5,516	100.0%
Plan 2	\$ 7,862	\$ 7,862	100.0%
WSPRS			
Plan 1 & 2	\$ 1,009	\$ 1,010	99.9%

Summary

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

Your Questions?

