

Preliminary Actuarial Audit For Pension Funding Council

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Agenda

- Your Milliman Team
- History
- 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

- Pleased 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 one of our first clients.
- Third biennial valuation audit in 2018
 - Second biennial valuation audit in summer 2016
 - 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 2015 valuation, but had recommendations for minor changes in methodology for future valuations

Audit process

- Goals
 - Verify financial conditions of systems are accurately reported
 - Confirm calculated contribution rates are accurate based on results of the valuation
 - 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
 - Review of investment rate of return assumption
- Actuarial Assets - independent replication

Audit Process (continued)

- Valuation liability calculations
 - Check individuals
 - Perform full parallel valuation
 - Compare results to OSA
 - Reconcile differences (if any)
- 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?

Reasonableness of assumptions and methodology – Investment Rate of Return

- Modeled expected return
 - Net of expenses
 - Other capital market assumptions could be used, including WSIB's from which OSA calculated a median 7.34% expectation (inflation assumption of 2.75%)
 - Based on Milliman's 12/31/2017 capital market assumptions and WSIB's target asset allocation, we project a long-term median return of 6.58% per year (inflation assumption of 2.30%)
- Actuarial Standards of Practice requires economic assumptions not be significantly optimistic or pessimistic
- Bottom line
 - The 7.50% return assumption is reasonable, although higher than the expected return

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	317,677	317,677	100.0%
Total Salaries (millions)	\$ 20,031	\$ 20,033	100.0%
Average Age	46.8	46.8	100.0%
Average Service	11.5	11.5	100.0%
Average Salary	\$ 63,054	\$ 63,062	100.0%
<i>Retirees and Survivors</i>			
Total Number	177,685	177,685	100.0%
Average Monthly Pension	\$ 1,897	\$ 1,895	100.1%
<i>Terminated Members</i>			
Total Number Vested	61,519	61,519	100.0%
Total Number Non-Vested	135,108	135,109	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	\$	7,042	\$ 7,040	100.0%
Plan 2/3 (DB)	\$	33,191	\$ 33,184	100.0%
TRS				
Plan 1	\$	5,371	\$ 5,369	100.0%
Plan 2/3 (DB)	\$	11,885	\$ 11,882	100.0%
SERS				
Plan 2/3 (DB)	\$	4,613	\$ 4,612	100.0%
PSERS				
Plan 2	\$	480	\$ 480	100.0%
LEOFF				
Plan 1	\$	5,403	\$ 5,402	100.0%
Plan 2	\$	11,037	\$ 11,035	100.0%
WSPRS				
Plan 1 & 2	\$	1,144	\$ 1,144	100.0%

Actuarial liabilities

- In progress

Summary

- Audit is in progress
- No issues to date
- Approach
 - Independent verification of results
 - Work with OSA to see if there are areas the work product can be improved
 - If any material differences exist, communicate “why” to PFC
- Does the PFC have any specific issues Milliman should address?

Your Questions?



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Milliman's work product was prepared exclusively for the PFC 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.