

Accumulated Sick Leave Conversion Credit Programs Actuarial Audit of December 31, 2018 Valuation

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Purpose and Scope

Purpose: Review GRS's work and confirm reasonableness of results

Scope: Full independent replication of December 31, 2018 Actuarial Valuation
Verify recommended contribution rates

Bottom Line

What you need to know

- GRS's actuarial work is reasonable and appropriate
 - Milliman obtained a reasonable match of the present value of benefits and the contribution rates
 - The package of actuarial assumptions is reasonable
- Recommendations
 - Include risk analysis in future reports
 - History of stable contribution rates
 - More disclosure of minor assumptions to aid technical audiences

Independent Replication of Valuation Results

Good match by plan for key actuarial components:

<i>(\$ in thousands)</i>	GRS	Milliman	Ratio GRS/Milliman
<i>Present Value of Benefits</i>			
Base Plan	\$1,938	\$1,923	100.8%
Supplemental Plan	\$1,155	\$1,193	96.8%
<i>Present Value of Future Earnings</i>	\$45,159	\$48,021	94.0%

Recommended Contribution Rates

Good match of contribution rates and funded ratios:

- Exact match using GRS's key actuarial components
- Good match using Milliman's key actuarial components, as shown in table below

	GRS	Milliman
<i>Recommended Contribution Rate</i>		
Base Rate	0.9%	0.8%
Supplemental Rate	0.3%	0.4%
Total	1.2%	1.2%
<i>Funded Ratio (Entry Age Normal)</i>		
Base Plan	107.9%	107.9%
Supplemental Plan	109.1%	105.7%

Membership Data

Reviewed data supplied by DETF

- Reviewed for reasonableness
- Confirmed all necessary information was included
- Additional comparison to WRS data needed to confirm eligibility and service

Reviewed data used in GRS's valuation

- Performed independent data editing
- Made edits for outliers and members with pay rates less than \$100
- Compared to reported participant data summary

Conclusion

- Data used by GRS is reasonably close to data used in replication

Membership Data

	GRS	Milliman	Ratio GRS/Milliman
Active Members			
Count	71,670	72,799	98.4%
Average Age in years	45.0	44.9	100.2%
Average Service in years	10.8	10.8	100.0%
Average Sick Leave Days	80.0	78.9	101.4%
Retirees			
Pre-65	4,543	4,543	100.0%
Post-65	12,546	12,546	100.0%
Total Retiree Count	17,089	17,089	100.0%
Monthly Premiums (\$ in thousands)			
Pre-65	5,258	5,258	100.0%
Post-65	7,850	7,850	100.0%
Total Retiree Premium	13,108	13,108	100.0%

Benefits, Assumptions and Methods

Benefits

- Benefits valued consistent description on DETF website and member handbooks

Actuarial methods and assumptions

- Method to determine contribution rates reasonable
- Economic, demographic and sick leave assumptions reasonable
- 7.0% investment return and 2.5% price inflation assumptions reasonable
- Varying expert views with respect to future returns
 - Milliman's capital market assumptions produce 6.6% median compound return over 50 year period
 - Returns expected to be less than 6.6% half the time and more than 6.6% half the time
 - Inflation assumption difference: Milliman 2.3% vs. GRS 2.5%

Actuarial Value of Assets

- DETF provided total market value and breakdown by Plan
- Matched values in GRS report
- Asset smoothing method and calculations reasonable

Conclusion

Recommendations for future reports

- Consider including additional risk disclosures using ASOP 51 framework
- Consider including additional disclosures for technical audience
 - Breakdown of inactive liabilities
 - Breakdown of inactive counts
 - Data procedures
 - How decrements valued
 - How pre-65 and post-65 premiums applied
 - Methodology to calculate supplemental plan present value of benefits
- No other changes recommended for 2019 valuation

Questions?

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