



UPDATED VALUATION RESULTS ESTIMATES

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

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Calendar

- October: System-wide results of December 31, 2020 actuarial valuation
- December:
 - **Advisory** employer-specific 2023-2025 contribution rates
 - Based on the December 31, 2020 actuarial valuation
 - Long-term financial modeling projections reflecting published investment **returns through September 30, 2021 of +15.39%**
 - System average contribution rates, funded status, and unfunded actuarial liability (UAL)
- Today: Preliminary estimate of system-wide December 31, 2021 results
 - Based on financial model presented in December, updated for published **full-year 2021 returns of +20.05%**
 - Actual December 31, 2021 valuation results will reflect updated member data
 - Initial system-average valuation results will be presented to the Board on July 22nd, 2022
 - Proposed 2023-2025 contribution rates for Board adoption on September 30th, 2022

Preliminary 12/31/2021 valuation results estimate

Actual 2021 Investment Return	Excluding Side Accounts		Including Side Accounts	
	UAL	Funded Status	UAL	Funded Status
+ 20.05%	\$19.7	80%	\$14.4	85%

(Amounts in billions)

- Estimate reflects 12/31/2020 member census data, including the effect of assumed individual member salary increases during 2021
- Side accounts reflected do not include new accounts established during 2021
- Final valuation results will be based on 12/31/2021 member census data, including the effect of actual individual member salary increases during 2021
- At 12/31/2020 and excluding side accounts, UAL was \$28.0 billion and funded status was 71%

System-average weighted total* pension-only rates

2009-2011 rates set prior to economic downturn

2011-2013 rates first to reflect -27% return in 2008

2013-2015 shown before (dotted line) and after (solid line) legislated changes

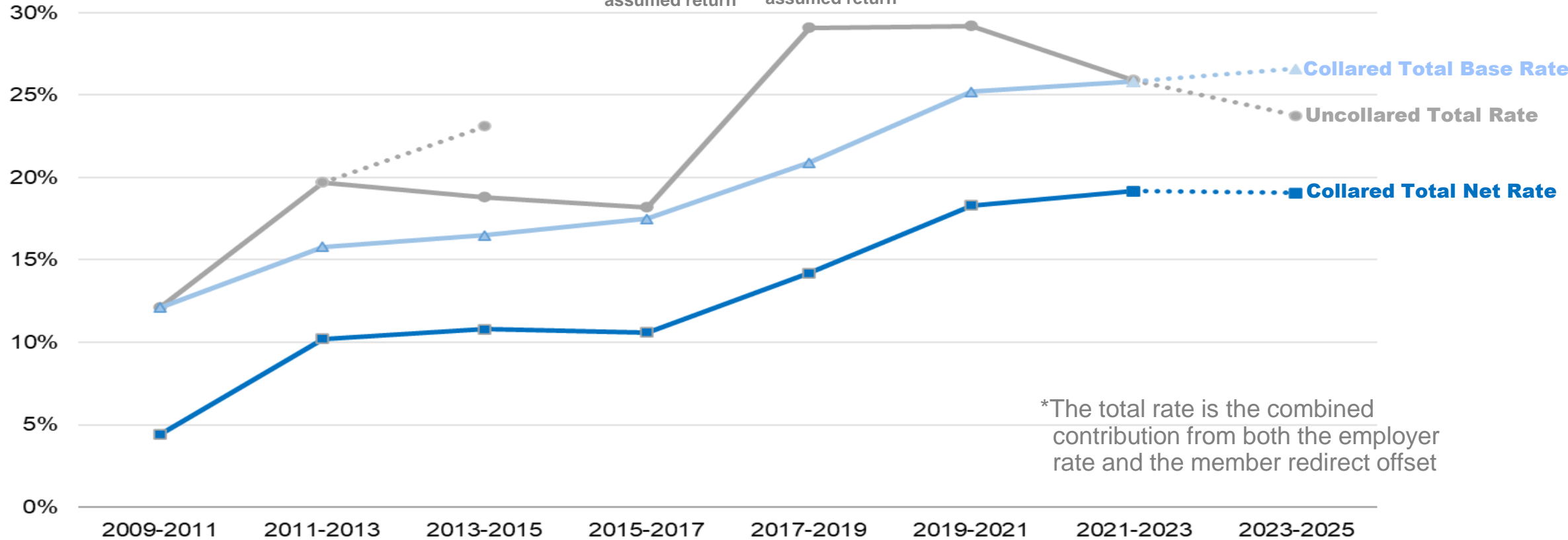
2015-2017 set pre-Moro reflecting 2012 (+14.3%) & 2013 (+15.6%) returns, first decrease in assumed return

2017-2019 set post-Moro, reflecting 2015 return (+2.1%) and second decrease in assumed return

2019-2021 reflects +15.4% return in 2017 and third decrease in assumed return

2021-2023 reflects +0.48% return in 2018 and +13.6% return in 2019

2023-2025 rates are preliminary estimates; reflects decrease in assumed return to 6.90% and 2021 actual return of +20.05%



*The total rate is the combined contribution from both the employer rate and the member redirect offset

Assumed Return:

8.00%

8.00%

8.00%

7.75%

7.50%

7.20%

7.20%

6.90%

System-average pension rates

	2021-2023	Estimated 2023-2025
Uncollared Total Rate	25.9%	23.8%
Collared Total Base Rate	25.8%	26.6%
Member Redirect Offset	<u>(1.2%)</u>	<u>(1.1%)</u>
Collared Base Employer Rate	24.6%	25.5%
Collared Net Employer Rate	17.9%	17.9%

(Excludes retiree healthcare and IAP contributions)

- Member redirect offset shown for 2023-2025 is average of 2.40% for Tier 1/Tier 2 and 0.65% for OPSRP, based on estimated 12/31/2021 payroll weightings
 - Amounts reflect estimated impact of redirect excluding members with monthly pay below statutory threshold
 - Over time, average will converge to OPSRP offset of 0.65%
- Estimates reflect 2021 investment return of +20.05% and 12/31/2020 member census data



Appendix

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Certification

This presentation summarizes a limited update to deterministic modeling for the Oregon Public Employees Retirement System (“PERS” or “the System”) initially presented to the PERS Board in December 2021. Updates since December 2021 consist solely of changes to modeled 2021 investment returns as noted in the body of this presentation, including a modeled +18.60% 2021 return on Tier 1/Tier 2 member variable accounts. The December 2021 presentation should be referenced for additional detail on the assumptions, methods, and plan provisions underlying these results.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System’s staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer our best estimate of anticipated experience affecting the System. The valuation results were developed using models intended for valuations that use standard actuarial techniques.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The PERS Board has the final decision regarding the appropriateness of the assumptions.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the System. The computations prepared for other purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System’s funding requirements and goals.

Certification

The calculations in this report have been made on a basis consistent with our understanding of the plan provisions described in the appendix of this report. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of the Oregon Public Employees Retirement System. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product.

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The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

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

Retirement System Risks

- Oregon PERS, like all defined benefit plans, is subject to various risks that will affect future plan liabilities and contribution requirements, including:
 - **Investment risk:** the potential that investment returns will be different than expected
 - **Demographic risks:** the potential that mortality experience, retirement behavior, or other demographic experience for the plan population will be different than expected
 - **Contribution risk:** the potential that actual future contributions will be materially different than expected, for example if there are material changes in the System's covered payroll
- The results of an actuarial valuation are based on one set of reasonable assumptions, but it is almost certain that future experience will not exactly match the assumptions.
- Further discussion of plan risks and historical information regarding plan experience are shown in our annual actuarial valuations. In addition, our annual financial modeling presentation to the PERS Board illustrates future outcomes under a wide range of future scenarios reflecting variation in key risk factors.