

December 2023

City of Phoenix/2249

Oregon Public Employees Retirement System

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2022. Information to assist you in preparing your required financial reporting disclosures under Statement 68 and Statement 75 of the Governmental Accounting Standards Board (GASB) will be provided separately by PERS and is not included in this report.

This valuation is advisory and does not affect employer contribution rates. Employer contribution rates effective July 1, 2025 through June 30, 2027 will be calculated in the December 31, 2023 actuarial valuation and those rates will likely vary from the advisory rates shown in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2022. The full development of the valuation results for the Tier One/Tier Two State and Local Government Rate Pool (SLGRP), Oregon Public Service Retirement Plan (OPSRP), Retiree Health Insurance Account (RHIA), and Retiree Health Insurance Premium Account (RHIPA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact actuarial.services@pers.oregon.gov.

Contents of Report

The executive summary provides the basic information you need, including:

- Contribution rates for Tier One/Tier Two, OPSRP general service, and OPSRP police and fire payroll, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Employer-specific weighted average Tier One/Tier Two normal cost rates,
- Transition liability or surplus balances and rate calculation,
- Side account balances, transactions, and rate relief,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx.

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The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2025 to June 2027 for System employers. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals, and with our understanding of the System benefit provisions described in the appendices of this report. Determinations for other purposes may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Actuarial assumptions, including discount rates, mortality tables, and others identified in this report, and actuarial cost methods are adopted by the Board. The Board is responsible for selecting the System's funding policy, actuarial valuation methods, asset valuation methods, and assumptions. The policies, methods, and assumptions used in the valuation are those that have been so adopted and are described in this report. All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which, in our professional opinion, are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated future experience affecting the System and are expected to have no significant bias.

This valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as, but not limited to, the following: System 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 modifications to contribution calculations based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the selection of the assumptions and actuarial cost methods and adopted them as indicated herein at the September 2023 Board Meeting.

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, System benefit provisions as defined by statute, member census 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.



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Milliman's work has been prepared for a specific and limited purpose solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors for the purpose of completing an audit related to matters herein. Milliman does not intend to benefit or create a legal duty to any third-party recipient of this work. It is a complex, technical analysis that assumes a high level of knowledge concerning the System's operations, and uses the System's data, which Milliman has not audited. No third-party recipient of Milliman's work product should rely upon this report. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The valuation results were developed using models intended for valuations that use standard actuarial techniques. We have reviewed the models, including their inputs, calculations, and outputs, for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice.

The consultants who worked on this assignment are 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 which are consistent with the principles prescribed by the Actuarial Standards Board and the Code of Professional Conduct and Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States published by the American Academy of Actuaries. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein. Assumptions related to the healthcare trend (cost inflation) rates for the RHIPA program discussed in this report were determined by Milliman actuaries qualified in such matters.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Matt Larrabee'.

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read 'Scott Preppernau'.

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2022

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Phoenix -- #2249

December 2023

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

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Executive Summary

Milliman has prepared this report for City of Phoenix to:

- Provide summary December 31, 2022 valuation results for the Tier One/Tier Two State and Local Government Rate Pool (SLGRP), Oregon Public Service Retirement Plan (OPSRP), and the Retiree Health Insurance programs (RHIA and RHIPA),
- Provide advisory information calculated as of December 31, 2022, on estimated employer-specific contribution rates effective July 1, 2025 through June 30, 2027, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2022.

This report summarizes the valuation results for the SLGRP, OPSRP, RHIA and RHIPA. The full development of these results can be found in the December 31, 2022 system-wide actuarial valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide actuarial valuation to City of Phoenix.

Retirement System Risks

Oregon PERS, like all defined benefit plans, is subject to various risks that will affect the future plan liabilities and contribution requirements, including investment risk, demographic risk, and contribution risk. While the results of an actuarial valuation are based on one set of reasonable assumptions, it is almost certain that future experience will not exactly match the assumptions. The section of the system-wide actuarial valuation report titled "Risk Disclosure" discusses the System's risks in more detail.

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier One/Tier Two rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier One/Tier Two payroll.

The following tables summarize the advisory employer contribution rates calculated as of December 31, 2022 and the employer contribution rates effective July 1, 2023 through June 30, 2025 calculated as of December 31, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

The employer contribution rates calculated as of December 31, 2021 are as previously published and do not reflect subsequent changes such as supplemental payments made by the employer.

In this report, the payroll of Tier One and Tier Two members is referred to as Tier One/Tier Two valuation payroll. Combined valuation payroll refers to the payroll for Tier One/Tier Two members, OPSRP general service members, and OPSRP police and fire members.

Executive Summary

Employer Contribution Rates (continued)

Advisory 2025 - 2027 Employer Contribution Rates Calculated as of December 31, 2022

	Payroll				
	Tier One/Tier Two			OPSRP	
	Default All Tier One/Tier Two Payroll	Optional Separate Rates		General Service	Police & Fire
		General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	17.07%	14.16%	21.98%	10.55%	15.14%
Tier One/Tier Two UAL rate ¹	12.54%	12.54%	12.54%	12.54%	12.54%
Multnomah Fire District #10 UAL rate	0.08%	0.08%	0.08%	0.08%	0.08%
OPSRP UAL rate	2.62%	2.62%	2.62%	2.62%	2.62%
Pre-SLGRP pooled liability rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ³	(4.58%)	(4.58%)	(4.58%)	(4.58%)	(4.58%)
Side account rate relief ³	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ⁴	(2.40%)	(2.40%)	(2.40%)	(0.65%)	(0.65%)
Net employer pension contribution rate	25.33%	22.42%	30.24%	20.56%	25.15%
Retiree Healthcare					
Normal cost rate	0.04%	0.04%	0.04%	0.00%	0.00%
UAL rate	(0.04%)	(0.04%)	(0.04%)	0.00%	0.00%
Net retiree healthcare rate	0.00%	0.00%	0.00%	0.00%	0.00%
Total net employer contribution rate	25.33%	22.42%	30.24%	20.56%	25.15%

Employer Contribution Rates Effective July 1, 2023

	Payroll				
	Tier One/Tier Two			OPSRP	
	Default All Tier One/Tier Two Payroll	Optional Separate Rates		General Service	Police & Fire
		General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	16.59%	13.66%	21.37%	9.89%	14.68%
Tier One/Tier Two UAL rate ¹	12.46%	12.46%	12.46%	12.46%	12.46%
Multnomah Fire District #10 UAL rate	0.15%	0.15%	0.15%	0.15%	0.15%
OPSRP UAL rate	1.69%	1.69%	1.69%	1.69%	1.69%
Pre-SLGRP pooled liability rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ³	(12.10%)	(12.10%)	(12.10%)	(12.10%)	(12.10%)
Side account rate relief ³	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ⁴	(2.40%)	(2.40%)	(2.40%)	(0.65%)	(0.65%)
Net employer pension contribution rate	16.39%	13.46%	21.17%	11.44%	16.23%
Retiree Healthcare					
Normal cost rate	0.04%	0.04%	0.04%	0.00%	0.00%
UAL rate	(0.04%)	(0.04%)	(0.04%)	0.00%	0.00%
Net retiree healthcare rate	0.00%	0.00%	0.00%	0.00%	0.00%
Total net employer contribution rate	16.39%	13.46%	21.17%	11.44%	16.23%

¹ Includes any impact of rate collar developed in the system-wide actuarial valuation report.

² Pre-SLGRP pooled liability rate developed in the system-wide actuarial valuation report. Effective 12/31/2022, reflects amortization to end of 2027-2029 biennium and includes adjustment for contribution lag.

³ The transition liability/(surplus) rate and side account rate relief shown may be reduced such that the net pension contribution rate does not go below 0.00%.

⁴ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier One/Tier Two and 0.75% of payroll for OPSRP) will offset employer contribution rates. Redirect does not apply to members with monthly pay below a threshold. The values shown in the table incorporate an estimate of the effect of this limitation.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier One/Tier Two UAL Contribution Rates for the July 2025 to June 2027 Biennium

The rate collar limits changes in the Tier One/Tier Two UAL Rate for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts and does not limit the change in the normal cost rate. The table below shows the possible minimum and maximum Tier One/Tier Two UAL Rates for the SLGRP first effective as of July 1, 2025. The collar width, which in general is the amount the UAL Rate could increase or decrease from the current UAL Rate being paid, is 3% of pay. However, the UAL Rate is only allowed to decrease by the full collar width if the funded status (excluding side accounts) of the SLGRP is greater than or equal to 90%. The UAL Rate is not allowed to decrease at all if funded status is below 87%, and the allowable decrease is phased in for funded status levels from 87% to 90%.

For reference, the Pool's funded status excluding side accounts as of December 31, 2022 is 71%.

2023-2025 Biennium	2025-2027 Biennium	
	15.46%	<<<No higher than this
12.46%	12.46%	<<<No lower than this if December 31, 2023 funded status is 87% or lower
	9.46%	<<<No lower than this if December 31, 2023 funded status is 90% or higher

For individual employers in the SLGRP, the SLGRP rate is adjusted to reflect the individual employer's pre-SLGRP pooled liability rate, transition liability rate, and side account rate offset to determine the individual employer's net contribution rate.

Normal Cost Rates

As seen on the prior page, the other large rate components are the normal cost rates for the Tier One/Tier Two and OPSRP programs. The normal cost rate represents the projected cost of benefits earned by current year service.

The normal cost rate in any biennium is driven by the active member demographics of the experience pooling groups in which the employer's members participate. While the active member census as of December 31, 2023 will be used to calculate the adopted 2025 - 2027 biennium normal cost rate, the active member census used in this advisory valuation should be similar for the large experience pooling groups.

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68 (GASB 68), which replaced Statement No. 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Retiree Healthcare

In June 2015, the GASB issued Statement 75 (GASB 75), which replaced Statement No. 45 and governs employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods, or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Phoenix

	Actuarial Valuation as of	
	December 31, 2022	December 31, 2021
Allocated pooled SLGRP Tier One/Tier Two UAL	\$3,030,510	\$1,772,045
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(643,130)	(789,347)
Allocated pooled OPSRP UAL	434,987	149,450
Side account	0	0
Net unfunded pension actuarial accrued liability	2,822,367	1,132,148
Combined valuation payroll	1,726,101	1,216,233
Net pension UAL as a percentage of payroll	164%	93%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(4.58%)	(12.10%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$46,707)	(\$37,782)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier One/Tier Two Pension, OPSRP, RHIA, and RHIPA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to the combined valuation payroll of the applicable pool. This allocation differs from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

RHIPA liabilities are allocated to State Agencies and the State Judiciary, the only employers participating in the RHIPA program.

Executive Summary

Principal Valuation Results (continued)

SLGRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2022	December 31, 2021
Normal cost	\$315.9	\$324.1
Tier One/Tier Two valuation payroll	1,883.4	1,981.7
Normal cost rate	16.77%	16.35%
Actuarial accrued liability	\$48,119.5	\$47,155.1
Actuarial asset value	33,992.6	36,315.8
Unfunded actuarial accrued liability	14,126.8	10,839.3
Funded status	71%	77%
Combined valuation payroll	\$8,046.3	\$7,439.5
UAL as a percentage of payroll	176%	146%
UAL rate ¹	12.62%	12.61%
State and Community College Pre-SLGRP Pooled Liability	\$258.2	\$312.2
LGRP Pooled Liability	(115.3)	(136.2)
Total Transition Liability	(372.6)	(438.7)
Tier One/Tier Two Active Members		
▪ Count	18,679	20,785
▪ Average Age	55.3	54.9
▪ Average Service	23.9	23.2
▪ Average Valuation Salary (in dollars)	\$100,830	\$95,345
Tier One/Tier Two Dormant Members		
▪ Count	13,387	14,209
▪ Average Age	58.6	58.1
▪ Average Monthly Benefit (in dollars)	\$1,564	\$1,508
Tier One/Tier Two Retirees and Beneficiaries		
▪ Count	93,471	92,134
▪ Average Age	73.1	72.7
▪ Average Monthly Benefit (in dollars)	\$2,599	\$2,521

¹ The December 31, 2022 UAL rate shown for the SLGRP includes 0.08% for Multnomah Fire District #10 (0.15% at December 31, 2021). The City of Portland pays an additional 0.57% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.08% (1.04% and 0.15% respectively at December 31, 2021). Effective 12/31/2022, reflects amortization to end of 2027-2029 biennium and includes adjustment for contribution lag.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2022	December 31, 2021
General service normal cost	\$970.5	\$796.4
OPSRP general service valuation payroll	9,200.3	8,052.6
General service normal cost rate	10.55%	9.89%
Police and fire normal cost	\$191.9	\$163.3
OPSRP police and fire valuation payroll	1,267.8	1,112.7
Police and fire normal cost rate	15.14%	14.68%
Actuarial accrued liability	\$14,544.9	\$11,806.2
Actuarial asset value	11,060.9	10,251.2
Unfunded actuarial accrued liability	3,484.1	1,555.0
Funded status	76%	87%
Combined valuation payroll	\$13,856.6	\$12,684.1
UAL as a percentage of payroll	25%	12%
UAL rate	2.62%	1.69%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2022	December 31, 2021
Normal cost	\$1.3	\$1.5
Tier One/Tier Two valuation payroll	3,388.6	3,518.8
Normal cost rate	0.04%	0.04%
Actuarial accrued liability	\$345.0	\$369.2
Actuarial asset value	720.0	763.2
Unfunded actuarial accrued liability	(374.9)	(394.0)
Funded status	209%	207%
Combined valuation payroll	\$13,856.6	\$12,684.1
UAL as a percentage of payroll	(3%)	(3%)
UAL rate	(0.04%)	(0.04%)

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2022	December 31, 2021
Normal cost	\$0.9	\$0.9
Tier One/Tier Two valuation payroll	1,008.9	1,053.3
Normal cost rate	0.09%	0.09%
Actuarial accrued liability	\$41.3	\$45.9
Actuarial asset value	85.9	82.9
Unfunded actuarial accrued liability	(44.6)	(37.0)
Funded status	208%	180%
Combined valuation payroll	\$4,278.2	\$3,938.0
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	(0.09%)	(0.09%)

RHIPA liabilities are allocated to State Agencies and the State Judiciary, the only employers participating in the RHIPA program.

Weighted Average Tier One/Tier Two Normal Cost Rate

Pension

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund the benefits.

Members of the State and Local Government Rate Pool pay a payroll-weighted average normal cost rate using the normal cost rates developed for the pool for each tier and member classification. The table below shows the calculation of the individual employer's Tier One/Tier Two normal cost rate by member classification and in aggregate. The employer can elect to pay the member classification rates or the aggregate rate. For purposes of this calculation, all Community Colleges are treated as a single employer.

Development of Total Weighted Average Tier One/Tier Two Normal Cost Rate

	December 31, 2022			December 31, 2021		
	SLGRP Normal Cost Rate	Employer Tier One/Tier Two Valuation	Normal Cost	SLGRP Normal Cost Rate	Employer Tier One/Tier Two Valuation	Normal Cost
Tier One General Service	18.26%	\$0	\$0	17.70%	\$0	\$0
Tier Two General Service	14.16%	157,229	22,264	13.66%	141,271	19,298
Total General Service		157,229	22,264		141,271	19,298
Tier One Police & Fire	23.64%	0	0	23.12%	0	0
Tier Two Police & Fire	21.98%	93,199	20,485	21.37%	86,624	18,512
Total Police & Fire		93,199	20,485		86,624	18,512
Total		\$250,428	\$42,749		\$227,895	\$37,810

Total normal cost rate

General Service	14.16%	13.66%
Police & Fire	21.98%	21.37%
Aggregate (Default)	17.07%	16.59%

An SLGRP employer that has no Tier One/Tier Two active payroll will be assigned the weighted average normal cost rate of the SLGRP as calculated in the system-wide actuarial valuation report.

Transition Liability Information

Outstanding Balance of Transition Liability/(Surplus)

Upon joining the SLGRP effective January 1, 2002, a transition liability or surplus was calculated to ensure that the employer entered the pool on a comparable basis. The transition liability is maintained separately from the SLGRP, and is reduced by contributions and increased for interest charges at the assumed interest rate. The table below shows the reconciliation of the transition liability or surplus from the last valuation to the current valuation.

	Transition Liability
1. Transition liability/(surplus) as of December 31, 2021	(\$789,347)
2. January 1, 2022 through June 30, 2022	
A. Transition liability/(surplus) rate ¹	(11.88%)
B. Actual employer payroll	752,025
C. Payment to transition liability/(surplus)	(89,341)
3. July 1, 2022 through December 31, 2022	
A. Transition liability/(surplus) rate ¹	(11.88%)
B. Actual employer payroll	828,189
C. Payment to transition liability/(surplus)	(98,388)
4. Supplemental payment to transition liability	0
5. Interest	(41,512)
6. Other adjustments, i.e. merger, spin-off, balance expiration	0
7. Transition liability/(surplus) as of December 31, 2022	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$643,130)

¹ Transition liability or surplus rates shown are those paid on Tier One/Tier Two payroll for the indicated periods. For some surplus employers, this rate may differ from the rate paid on OPSRP general service or OPSRP police and fire payroll. In those cases, the payment to transition (surplus) shown below is the payment reflecting the rates on different payroll.

Development of Transition Liability or Surplus Rate

The rate adjustment attributable to a transition liability or surplus is determined by amortizing the liability or surplus on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For employers joining the SLGRP prior to December 31, 2009, the fixed period ends December 31, 2027. For all others, the fixed period ends 18 years after the date the employer joined the pool. The transition liability/(surplus) rate calculation shown below uses a fixed period ending December 31, 2027. The amortization period for the rate adjustment extends 18 months after the end of the fixed period to align with the biennial rate-setting cycle.

	December 31, 2022	December 31, 2021
1. Total transition liability/(surplus)	(643,130)	(789,347)
2. Combined valuation payroll	1,726,101	1,216,233
3. Regular amortization factor ¹	8.135	5.363
4. Total transition liability/(surplus) rate	(4.58%)	(12.10%)

¹ Effective December 31, 2022, reflects alignment of amortization period with biennial rate changes and includes adjustment for contribution lag as described in the system-wide actuarial valuation report

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2021	N/A		
2. Deposits during 2022			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2022			
5. Side account earnings during 2022			
6. Side account as of December 31, 2022 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	Deposit Date	Rate Offset End Date	December 31, 2022	December 31, 2021
Side Account 1			0	0
Side Account 2			0	0
Side Account 3			0	0
Side Account 4			0	0
Side Account 5			0	0
Side Account 6			0	0
Side Account 7			0	0
Total			\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the default fixed period ends 18 years after the first rate-setting valuation following its creation, though employers can select a shorter period under certain specified circumstances. For employers with more than one side account, the total side account rate is determined by calculating the rate on each side account separately and adding the rates together.

December 31, 2022			December 31, 2021		
Combined valuation payroll		\$1,726,101	Combined valuation payroll		\$1,216,233
Side account balance	Amortization factor ^{1, 2}	Side account rate ¹	Side account balance	Amortization factor ^{1, 2}	Side account rate ¹
1.	0	0.00%	0		0.00%
2.	0	0.00%	0		0.00%
3.	0	0.00%	0		0.00%
4.	0	0.00%	0		0.00%
5.	0	0.00%	0		0.00%
6.	0	0.00%	0		0.00%
7.	0	0.00%	0		0.00%
Total	\$0	0.00%	\$0		0.00%

¹ Amortization factor and side account rate not shown for side accounts with less than two years remaining in the amortization period

² Effective December 31, 2022, includes adjustment for contribution lag as described in the system-wide actuarial valuation report

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2022 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization method</i>	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10-year period. If a Retiree Healthcare program is over 100% funded the actuarial surplus is amortized over a rolling 20-year period over Tier One/Tier Two payroll. Senate Bill 1049 was signed into law in June 2019 and required a one-time re-amortization of Tier One/Tier Two UAL over a closed 22-year period at the December 31, 2019 rate-setting actuarial valuation, which set actuarially determined contribution rates for the 2021-2023 biennium. Future Tier One/Tier Two gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20-year period.
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	The contribution rate stabilization method, also referred to as the rate collar, is applied separately to OPSRP and to each Tier One/Tier Two experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The UAL Rate contribution rate component is confined to a collared range based on the prior biennium's collared UAL Rate and a defined collar width. The UAL Rate is not allowed to decrease if the funded status of the rate pool or employer is 87% or lower. The rate collar does not limit the change in the normal cost rate or changes for individual employers related to side accounts.

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Investment return</i>	6.90% compounded annually on system assets.
<i>Interest crediting</i>	6.90% compounded annually on members' regular account balances. 6.90% compounded annually on members' variable account balances.
<i>Inflation</i>	2.40% per year.
<i>Payroll Growth</i>	3.40% per year.
<i>Healthcare cost trend</i>	Ranging from 6.6% in 2023 to 3.8% in 2074.
<i>Administrative Expenses</i>	\$64 million per year is added to the total system normal cost and allocated between Tier One/Tier Two and OPSRP based on valuation payroll.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2021 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

- An adjustment was added to the side account amortization calculations and Pre-SLGRP liability and surplus calculations to reflect the delay between when a rate is calculated and when it takes effect.
- The timing of the amortization period for Pre-SLGRP liabilities and surpluses for SLGRP employers was revised to align with the biennial rate-setting cycle.

Changes in Economic Assumptions

- Assumed administrative expenses were updated to a combined assumption of \$64 million for Tier One/Tier Two and OPSRP.
- The assumed healthcare cost trend rates for the RHIPA program were updated.

Changes in Demographic Assumptions

- The merit/longevity component assumption of individual member salary increases was updated for all groups, including adding a select assumption of an additional 2% for all members for two years.
- The mortality improvement projection scale applied to all groups is based on 60-year unisex average mortality improvement rates by age. The assumption was updated to reflect publicly available data through 2019. For a complete table of rates, please refer to the 2022 Experience Study for the System, published in July 2023.
- Termination, disability and retirement rates were updated for some groups to more closely match observed and anticipated future experience.
- Assumptions for unused sick leave and vacation pay were updated.
- Participation assumptions for both RHIA and RHIPA were updated.

A complete summary of all assumptions used as part of the December 31, 2022 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions reflected since the December 31, 2021 actuarial valuation. A complete summary of the Tier One/Tier Two, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement, rates of investment earnings, and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier One/Tier Two and OPSRP active members. This payroll is used to calculate UAL rates.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability/(Surplus)

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability/(Surplus)

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A contribution rate setting methodology that defines the maximum biennium-to-biennium change in the UAL contribution rate for a given experience-sharing pool.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions. The standard replaced GASB 27 for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions. The standard replaced GASB Statement 45 for fiscal years beginning after June 15, 2017.

Tier One/Tier Two Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier One and Tier Two active members. This payroll is used to calculate the Tier One/Tier Two normal cost rates.

Transition Liability/(Surplus)

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool. The initial balance of liability or surplus is calculated at the time an employer joins the pool. That balance is then amortized over time via employer contribution rate charges (for a liability) or rate offsets (for a surplus).

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
1455 SW Broadway, Suite 1600
Portland, OR 97201-3412
503 227 0634

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