

December 2019

Port of Garibaldi/2741

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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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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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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



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This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Port of Garibaldi -- #2741

December 2019

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Executive Summary

Milliman has prepared this report for Port of Garibaldi to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Port of Garibaldi.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Port of Garibaldi

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.90%	14.90%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(2.68%)	(2.68%)	(2.68%)	(2.68%)	(2.68%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	24.47%	24.47%	30.28%	20.02%	24.39%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	24.52%	24.52%	30.33%	20.02%	24.39%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Port of Garibaldi

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$663,656	\$864,747
Allocated pre-SLGRP pooled liability/(surplus)	(36,339)	(63,292)
Transition liability/(surplus)	(62,279)	(65,468)
Allocated pooled OPSRP UAL	55,244	68,308
Side account	0	0
Net unfunded pension actuarial accrued liability	620,282	804,295
Combined valuation payroll	305,953	453,300
Net pension UAL as a percentage of payroll	203%	177%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(2.68%)	(1.74%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$4,485)	(\$5,194)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$40,279	\$6,851	17.17%	\$52,520	\$9,018
Tier 2 General Service	12.84%	41,243	5,296	12.64%	60,607	7,661
Total General Service		81,522	12,147		113,127	16,679
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$81,522	\$12,147		\$113,127	\$16,679
Total normal cost rate						
General Service			14.90%			14.74%
Police & Fire			20.71%			20.83%
Aggregate (Default)			14.90%			14.74%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$65,468)
2. January 1, 2018 through June 30, 2018 ¹	
A. Transition liability/(surplus) rate	(2.53%)
B. Actual employer payroll	216,362
C. Payment to transition liability/(surplus)	(5,474)
3. July 1, 2018 through December 31, 2018 ¹	
A. Transition liability/(surplus) rate	(2.53%)
B. Actual employer payroll	75,017
C. Payment to transition liability/(surplus)	(1,898)
4. Supplemental payment to transition liability	0
5. Interest	(4,183)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$62,279)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(62,279)	(65,468)
2. Combined valuation payroll	305,953	453,300
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(2.68%)	(1.74%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	305,953	453,300
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Amity Fire District/2742
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.



December 2019
Amity Fire District/2742

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Amity Fire District/2742

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Amity Fire District -- #2742

December 2019

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Executive Summary

Milliman has prepared this report for Amity Fire District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Amity Fire District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Amity Fire District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	21.89%	14.58%	21.89%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(6.04%)	(6.04%)	(6.04%)	(6.04%)	(6.04%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	28.10%	20.79%	28.10%	16.66%	21.03%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	28.15%	20.84%	28.15%	16.66%	21.03%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Amity Fire District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$228,498	\$192,133
Allocated pre-SLGRP pooled liability/(surplus)	(12,511)	(14,063)
Transition liability/(surplus)	(48,423)	(52,750)
Allocated pooled OPSRP UAL	19,021	15,177
Side account	0	0
Net unfunded pension actuarial accrued liability	186,585	140,497
Combined valuation payroll	105,340	100,716
Net pension UAL as a percentage of payroll	177%	140%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(6.04%)	(6.30%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$1,544)	(\$1,154)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	83,307	18,494	22.26%	76,266	16,977
Tier 2 Police & Fire	20.00%	13,751	2,750	20.05%	17,143	3,437
Total Police & Fire		97,058	21,244		93,409	20,414
Total		\$97,058	\$21,244		\$93,409	\$20,414
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			21.89%			21.85%
Aggregate (Default)			21.89%			21.85%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$52,750)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(7.48%)
B. Actual employer payroll	49,353
C. Payment to transition liability/(surplus)	(3,692)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(7.48%)
B. Actual employer payroll	51,962
C. Payment to transition liability/(surplus)	(3,887)
4. Supplemental payment to transition liability	0
5. Interest	(3,252)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$48,423)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(48,423)	(52,750)
2. Combined valuation payroll	105,340	100,716
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(6.04%)	(6.30%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	105,340	100,716
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Clackamas County Fire District/2745
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Clackamas County Fire District/2745

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Clackamas County Fire District/2745

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Clackamas County Fire District -- #2745

December 2019

Secondary Employers

2164	Milwaukie Central Dispatch
2517	Clackamas Fire District #1
2523	Oak Lodge Fire Department
2537	Clackamas Fire Protection District #71
2546	Happy Valley Fire District
2548	Multnomah Rural Fire Protection District #12
2574	Clackamas County Rural Fire Protection District #54
2583	Beavercreek Fire District
2591	Clackamas County Rural Fire Protection District #68

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Executive Summary

Milliman has prepared this report for Clackamas County Fire District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Clackamas County Fire District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Clackamas County Fire District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	20.16%	13.74%	20.86%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(0.35%)	(0.35%)	(0.35%)	(0.35%)	(0.35%)
Side account rate relief ²	(3.12%)	(3.12%)	(3.12%)	(3.12%)	(3.12%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	30.50%	24.08%	31.20%	20.79%	25.16%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	30.55%	24.13%	31.25%	20.79%	25.16%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Clackamas County Fire District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$69,368,322	\$57,040,049
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(845,811)	(789,003)
Allocated pooled OPSRP UAL	5,774,358	4,505,718
Side account	7,588,806	8,738,419
Net unfunded pension actuarial accrued liability	66,708,063	52,018,345
Combined valuation payroll	31,979,582	29,900,353
Net pension UAL as a percentage of payroll	209%	174%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(0.35%)	(0.32%)
Side account rate relief	(3.12%)	(3.52%)
Allocated pooled RHIA UAL	(\$468,750)	(\$342,604)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$237,356	\$40,374	17.17%	\$225,783	\$38,767
Tier 2 General Service	12.84%	861,845	110,661	12.64%	813,984	102,888
Total General Service		1,099,201	151,035		1,039,767	141,655
Tier 1 Police & Fire	22.20%	3,937,256	874,071	22.26%	5,622,971	1,251,673
Tier 2 Police & Fire	20.00%	6,098,778	1,219,756	20.05%	5,971,881	1,197,362
Total Police & Fire		10,036,034	2,093,827		11,594,852	2,449,035
Total		\$11,135,235	\$2,244,862		\$12,634,619	\$2,590,690

Total normal cost rate

General Service	13.74%	13.62%
Police & Fire	20.86%	21.12%
Aggregate (Default)	20.16%	20.50%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$789,003)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	15,040,897
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	17,235,347
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	(56,808)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$845,811)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(845,811)	(789,003)
2. Combined valuation payroll	31,979,582	29,900,353
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.35%)	(0.32%)

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, 2017	N/A	\$8,738,419	\$8,738,419
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(1,205,690)	(1,205,690)
5. Side account earnings during 2018		56,578	56,578
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$7,588,806	\$7,588,806

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$7,588,806	\$8,738,419
Side Account 2	0	0
Side Account 3	0	0
Total	\$7,588,806	\$8,738,419

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$7,588,806	\$8,738,419
2. Combined valuation payroll	31,979,582	29,900,353
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(3.12%)	(3.52%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Black Butte Ranch Police/2749
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Black Butte Ranch Police/2749

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Black Butte Ranch Police/2749

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Black Butte Ranch Police -- #2749

December 2019

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Executive Summary

Milliman has prepared this report for Black Butte Ranch Police to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Black Butte Ranch Police.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Black Butte Ranch Police

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	20.00%	14.58%	20.00%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(8.11%)	(8.11%)	(8.11%)	(8.11%)	(8.11%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	24.14%	18.72%	24.14%	14.59%	18.96%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	24.19%	18.77%	24.19%	14.59%	18.96%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Black Butte Ranch Police

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$900,238	\$822,718
Allocated pre-SLGRP pooled liability/(surplus)	(49,293)	(60,216)
Transition liability/(surplus)	(256,124)	(271,267)
Allocated pooled OPSRP UAL	74,938	64,988
Side account	0	0
Net unfunded pension actuarial accrued liability	669,759	556,223
Combined valuation payroll	415,020	431,268
Net pension UAL as a percentage of payroll	161%	129%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(8.11%)	(7.57%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$6,083)	(\$4,942)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	211,563	42,313	20.05%	277,277	55,594
Total Police & Fire		211,563	42,313		277,277	55,594
Total		\$211,563	\$42,313		\$277,277	\$55,594
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.00%			20.05%
Aggregate (Default)			20.00%			20.05%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$271,267)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(7.41%)
B. Actual employer payroll	219,278
C. Payment to transition liability/(surplus)	(16,248)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(7.41%)
B. Actual employer payroll	217,224
C. Payment to transition liability/(surplus)	(16,097)
4. Supplemental payment to transition liability	0
5. Interest	(17,202)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$256,124)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(256,124)	(271,267)
2. Combined valuation payroll	415,020	431,268
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(8.11%)	(7.57%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	415,020	431,268
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Mist-Birkenfeld Rural Fire Protection District/2752
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Mist-Birkenfeld Rural Fire Protection District/2752

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Mist-Birkenfeld Rural Fire Protection District/2752

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Mist-Birkenfeld Rural Fire Protection District -- #2752

December 2019

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 Mist-Birkenfeld Rural Fire Protection District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Mist-Birkenfeld Rural Fire Protection District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Mist-Birkenfeld Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	20.00%	14.58%	20.00%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(6.24%)	(6.24%)	(6.24%)	(6.24%)	(6.24%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	27.57%	22.15%	27.57%	18.02%	22.39%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	27.62%	22.20%	27.62%	18.02%	22.39%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Mist-Birkenfeld Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$595,387	\$316,255
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(130,174)	(151,635)
Allocated pooled OPSRP UAL	49,561	24,982
Side account	0	0
Net unfunded pension actuarial accrued liability	514,774	189,602
Combined valuation payroll	274,480	165,781
Net pension UAL as a percentage of payroll	188%	114%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(6.24%)	(11.00%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$4,023)	(\$1,900)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	127,915	25,583	20.05%	47,160	9,456
Total Police & Fire		127,915	25,583		47,160	9,456
Total		\$127,915	\$25,583		\$47,160	\$9,456
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.00%			20.05%
Aggregate (Default)			20.00%			20.05%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$151,635)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(15.22%)
B. Actual employer payroll	86,850
C. Payment to transition liability/(surplus)	(13,219)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(15.22%)
B. Actual employer payroll	111,595
C. Payment to transition liability/(surplus)	(16,985)
4. Supplemental payment to transition liability	0
5. Interest	(8,743)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$130,174)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(130,174)	(151,635)
2. Combined valuation payroll	274,480	165,781
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(6.24%)	(11.00%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	274,480	165,781
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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December 2019

Linn-Benton Housing Authority/2753
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Linn-Benton Housing Authority/2753

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Linn-Benton Housing Authority/2753

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Linn-Benton Housing Authority -- #2753

December 2019

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Executive Summary

Milliman has prepared this report for Linn-Benton Housing Authority to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Linn-Benton Housing Authority.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Linn-Benton Housing Authority

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	13.79%	13.79%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(8.85%)	(8.85%)	(8.85%)	(8.85%)	(8.85%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	18.75%	18.75%	25.67%	15.41%	19.78%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	18.80%	18.80%	25.72%	15.41%	19.78%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Linn-Benton Housing Authority

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$2,672,580	\$1,983,068
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(828,925)	(872,769)
Allocated pooled OPSRP UAL	222,471	156,647
Side account	0	0
Net unfunded pension actuarial accrued liability	2,066,126	1,266,946
Combined valuation payroll	1,232,089	1,039,523
Net pension UAL as a percentage of payroll	168%	122%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(8.85%)	(10.10%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$18,060)	(\$11,911)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$156,085	\$26,550	17.17%	\$145,535	\$24,988
Tier 2 General Service	12.84%	531,383	68,230	12.64%	493,336	62,358
Total General Service		687,468	94,780		638,871	87,346
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$687,468	\$94,780		\$638,871	\$87,346
Total normal cost rate						
General Service			13.79%			13.67%
Police & Fire			20.71%			20.83%
Aggregate (Default)			13.79%			13.67%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$872,769)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(8.35%)
B. Actual employer payroll	565,647
C. Payment to transition liability/(surplus)	(47,232)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(8.35%)
B. Actual employer payroll	626,196
C. Payment to transition liability/(surplus)	(52,286)
4. Supplemental payment to transition liability	0
5. Interest	(55,674)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$828,925)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(828,925)	(872,769)
2. Combined valuation payroll	1,232,089	1,039,523
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(8.85%)	(10.10%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	1,232,089	1,039,523
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Western Lane Ambulance District/2754
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Western Lane Ambulance District/2754

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Western Lane Ambulance District/2754

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Western Lane Ambulance District -- #2754

December 2019

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Executive Summary

Milliman has prepared this report for Western Lane Ambulance District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Western Lane Ambulance District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Western Lane Ambulance District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	13.61%	13.61%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(0.18%)	(0.18%)	(0.18%)	(0.18%)	(0.18%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	25.68%	25.68%	32.78%	22.52%	26.89%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	25.73%	25.73%	32.83%	22.52%	26.89%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Western Lane Ambulance District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$3,576,630	\$2,878,942
Allocated pre-SLGRP pooled liability/(surplus)	(195,839)	(210,714)
Transition liability/(surplus)	(22,866)	(25,004)
Allocated pooled OPSRP UAL	297,726	227,414
Side account	0	0
Net unfunded pension actuarial accrued liability	3,655,651	2,870,638
Combined valuation payroll	1,648,867	1,509,139
Net pension UAL as a percentage of payroll	222%	190%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(0.18%)	(0.20%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$24,169)	(\$17,292)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$129,418	\$22,014	17.17%	\$217,609	\$37,363
Tier 2 General Service	12.84%	573,886	73,687	12.64%	525,662	66,444
Total General Service		703,304	95,701		743,271	103,807
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$703,304	\$95,701		\$743,271	\$103,807
Total normal cost rate						
General Service			13.61%			13.97%
Police & Fire			20.71%			20.83%
Aggregate (Default)			13.61%			13.97%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$25,004)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(0.23%)
B. Actual employer payroll	718,770
C. Payment to transition liability/(surplus)	(1,653)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(0.23%)
B. Actual employer payroll	878,658
C. Payment to transition liability/(surplus)	(2,021)
4. Supplemental payment to transition liability	0
5. Interest	(1,536)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$22,866)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(22,866)	(25,004)
2. Combined valuation payroll	1,648,867	1,509,139
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.18%)	(0.20%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	1,648,867	1,509,139
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

City of Stayton/2757

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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
City of Stayton/2757

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
City of Stayton/2757

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Stayton -- #2757

December 2019

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 Stayton to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to City of Stayton.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for City of Stayton

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	20.00%	14.58%	20.00%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(1.13%)	(1.13%)	(1.13%)	(1.13%)	(1.13%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	31.12%	25.70%	31.12%	21.57%	25.94%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	31.17%	25.75%	31.17%	21.57%	25.94%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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 Stayton

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$1,883,607	\$1,965,600
Allocated pre-SLGRP pooled liability/(surplus)	(103,137)	(143,865)
Transition liability/(surplus)	(74,625)	(77,685)
Allocated pooled OPSRP UAL	156,795	155,267
Side account	0	0
Net unfunded pension actuarial accrued liability	1,862,640	1,899,317
Combined valuation payroll	868,364	1,030,366
Net pension UAL as a percentage of payroll	215%	184%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(1.13%)	(0.91%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$12,728)	(\$11,806)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	594,182	118,836	20.05%	567,092	113,702
Total Police & Fire		594,182	118,836		567,092	113,702
Total		\$594,182	\$118,836		\$567,092	\$113,702
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.00%			20.05%
Aggregate (Default)			20.00%			20.05%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$77,685)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(0.95%)
B. Actual employer payroll	429,760
C. Payment to transition liability/(surplus)	(4,083)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(0.95%)
B. Actual employer payroll	419,919
C. Payment to transition liability/(surplus)	(3,989)
4. Supplemental payment to transition liability	0
5. Interest	(5,012)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$74,625)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(74,625)	(77,685)
2. Combined valuation payroll	868,364	1,030,366
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(1.13%)	(0.91%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	868,364	1,030,366
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Mohawk Valley Rural Fire District/2758
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Mohawk Valley Rural Fire District/2758

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Mohawk Valley Rural Fire District/2758

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Mohawk Valley Rural Fire District -- #2758

December 2019

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Executive Summary

Milliman has prepared this report for Mohawk Valley Rural Fire District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Mohawk Valley Rural Fire District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Mohawk Valley Rural Fire District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(2.94%)	(2.94%)	(2.94%)	(2.94%)	(2.94%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	25.09%	23.89%	30.02%	19.76%	24.13%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	25.14%	23.94%	30.07%	19.76%	24.13%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Mohawk Valley Rural Fire District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$536,204	\$209,864
Allocated pre-SLGRP pooled liability/(surplus)	(29,360)	(15,360)
Transition liability/(surplus)	(55,246)	(69,885)
Allocated pooled OPSRP UAL	44,635	16,578
Side account	0	0
Net unfunded pension actuarial accrued liability	496,233	141,197
Combined valuation payroll	247,196	110,011
Net pension UAL as a percentage of payroll	201%	128%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(2.94%)	(7.64%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$3,623)	(\$1,261)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$69,885)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(9.66%)
B. Actual employer payroll	73,985
C. Payment to transition liability/(surplus)	(7,147)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(9.66%)
B. Actual employer payroll	115,975
C. Payment to transition liability/(surplus)	(11,203)
4. Supplemental payment to transition liability	0
5. Interest	(3,711)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$55,246)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(55,246)	(69,885)
2. Combined valuation payroll	247,196	110,011
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(2.94%)	(7.64%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	247,196	110,011
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Clackamas River Water/2761
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Clackamas River Water/2761

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Clackamas River Water/2761

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Clackamas River Water -- #2761

December 2019

Secondary Employers

2634 Clairmont Water

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Executive Summary

Milliman has prepared this report for Clackamas River Water to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Clackamas River Water.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Clackamas River Water

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	13.70%	13.70%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	2.73%	2.73%	2.73%	2.73%	2.73%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	28.68%	28.68%	35.69%	25.43%	29.80%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	28.73%	28.73%	35.74%	25.43%	29.80%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Clackamas River Water

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$6,860,935	\$5,743,019
Allocated pre-SLGRP pooled liability/(surplus)	(375,671)	(420,340)
Transition liability/(surplus)	657,647	712,308
Allocated pooled OPSRP UAL	571,118	453,654
Side account	0	0
Net unfunded pension actuarial accrued liability	7,714,029	6,488,641
Combined valuation payroll	3,162,969	3,010,486
Net pension UAL as a percentage of payroll	244%	216%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	2.73%	2.85%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$46,362)	(\$34,495)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$287,524	\$48,908	17.17%	\$353,593	\$60,712
Tier 2 General Service	12.84%	1,100,593	141,316	12.64%	1,201,349	151,851
Total General Service		1,388,117	190,224		1,554,942	212,563
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$1,388,117	\$190,224		\$1,554,942	\$212,563
Total normal cost rate						
General Service			13.70%			13.67%
Police & Fire			20.71%			20.83%
Aggregate (Default)			13.70%			13.67%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$712,308
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	3.15%
B. Actual employer payroll	1,540,887
C. Payment to transition liability/(surplus)	48,538
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	3.15%
B. Actual employer payroll	1,596,604
C. Payment to transition liability/(surplus)	50,293
4. Supplemental payment to transition liability	0
5. Interest	44,170
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	\$657,647

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	657,647	712,308
2. Combined valuation payroll	3,162,969	3,010,486
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	2.73%	2.85%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	3,162,969	3,010,486
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Junction City Fire Department/2763
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Junction City Fire Department/2763

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Junction City Fire Department/2763

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Junction City Fire Department -- #2763

December 2019

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Executive Summary

Milliman has prepared this report for Junction City Fire Department to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Junction City Fire Department.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Junction City Fire Department

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	12.84%	12.84%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(4.29%)	(4.29%)	(4.29%)	(4.29%)	(4.29%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	22.36%	22.36%	30.23%	19.97%	24.34%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	22.41%	22.41%	30.28%	19.97%	24.34%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Junction City Fire Department

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$476,030	\$681,319
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(71,663)	(81,634)
Allocated pooled OPSRP UAL	39,626	53,819
Side account	0	0
Net unfunded pension actuarial accrued liability	443,993	653,504
Combined valuation payroll	219,455	357,147
Net pension UAL as a percentage of payroll	202%	183%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(4.29%)	(2.75%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$3,217)	(\$4,092)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	37,006	4,752	12.64%	36,428	4,604
Total General Service		37,006	4,752		36,428	4,604
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	61,656	12,362
Total Police & Fire		0	0		61,656	12,362
Total		\$37,006	\$4,752		\$98,084	\$16,966
Total normal cost rate						
General Service			12.84%			12.64%
Police & Fire			20.71%			20.05%
Aggregate (Default)			12.84%			17.30%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$81,634)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(4.56%)
B. Actual employer payroll	156,493
C. Payment to transition liability/(surplus)	(7,136)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(4.56%)
B. Actual employer payroll	167,721
C. Payment to transition liability/(surplus)	(7,648)
4. Supplemental payment to transition liability	0
5. Interest	(4,813)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$71,663)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(71,663)	(81,634)
2. Combined valuation payroll	219,455	357,147
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(4.29%)	(2.75%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	219,455	357,147
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Green Sanitary/2765

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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Green Sanitary/2765

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Green Sanitary/2765

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Green Sanitary -- #2765

December 2019

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Executive Summary

Milliman has prepared this report for Green Sanitary to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Green Sanitary.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Green Sanitary

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.71%	14.71%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(1.48%)	(1.48%)	(1.48%)	(1.48%)	(1.48%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	25.48%	25.48%	31.48%	21.22%	25.59%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	25.53%	25.53%	31.53%	21.22%	25.59%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Green Sanitary

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$674,925	\$542,881
Allocated pre-SLGRP pooled liability/(surplus)	(36,956)	(39,734)
Transition liability/(surplus)	(35,099)	(36,884)
Allocated pooled OPSRP UAL	56,182	42,883
Side account	0	0
Net unfunded pension actuarial accrued liability	659,052	509,146
Combined valuation payroll	311,148	284,578
Net pension UAL as a percentage of payroll	212%	179%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(1.48%)	(1.56%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$4,561)	(\$3,261)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$139,549	\$23,737	17.17%	\$138,351	\$23,755
Tier 2 General Service	12.84%	171,599	22,033	12.64%	146,227	18,483
Total General Service		311,148	45,770		284,578	42,238
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$311,148	\$45,770		\$284,578	\$42,238
Total normal cost rate						
General Service			14.71%			14.84%
Police & Fire			20.71%			20.83%
Aggregate (Default)			14.71%			14.84%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$36,884)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(1.38%)
B. Actual employer payroll	148,547
C. Payment to transition liability/(surplus)	(2,050)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(1.38%)
B. Actual employer payroll	151,622
C. Payment to transition liability/(surplus)	(2,092)
4. Supplemental payment to transition liability	0
5. Interest	(2,357)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$35,099)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(35,099)	(36,884)
2. Combined valuation payroll	311,148	284,578
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(1.48%)	(1.56%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	311,148	284,578
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Southwest Lincoln County Water District/2766
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Southwest Lincoln County Water District/2766

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Southwest Lincoln County Water District/2766

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Southwest Lincoln County Water District -- #2766

December 2019

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 Southwest Lincoln County Water District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Southwest Lincoln County Water District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Southwest Lincoln County Water District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	13.97%	13.97%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(1.40%)	(1.40%)	(1.40%)	(1.40%)	(1.40%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	24.82%	24.82%	31.56%	21.30%	25.67%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	24.87%	24.87%	31.61%	21.30%	25.67%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Southwest Lincoln County Water District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$630,071	\$527,384
Allocated pre-SLGRP pooled liability/(surplus)	(34,500)	(38,600)
Transition liability/(surplus)	(31,024)	(32,255)
Allocated pooled OPSRP UAL	52,448	41,659
Side account	0	0
Net unfunded pension actuarial accrued liability	616,995	498,188
Combined valuation payroll	290,470	276,454
Net pension UAL as a percentage of payroll	212%	180%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(1.40%)	(1.40%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$4,258)	(\$3,168)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$51,372	\$8,738	17.17%	\$48,489	\$8,326
Tier 2 General Service	12.84%	137,459	17,650	12.64%	131,015	16,560
Total General Service		188,831	26,388		179,504	24,886
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$188,831	\$26,388		\$179,504	\$24,886
Total normal cost rate						
General Service			13.97%			13.86%
Police & Fire			20.71%			20.83%
Aggregate (Default)			13.97%			13.86%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$32,255)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(1.19%)
B. Actual employer payroll	134,259
C. Payment to transition liability/(surplus)	(1,598)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(1.19%)
B. Actual employer payroll	144,246
C. Payment to transition liability/(surplus)	(1,717)
4. Supplemental payment to transition liability	0
5. Interest	(2,084)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$31,024)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(31,024)	(32,255)
2. Combined valuation payroll	290,470	276,454
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(1.40%)	(1.40%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	290,470	276,454
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Lake County Library District/2768
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Lake County Library District/2768

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Lake County Library District/2768

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Lake County Library District -- #2768

December 2019

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Executive Summary

Milliman has prepared this report for Lake County Library District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Lake County Library District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Lake County Library District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.40%	15.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	0.72%	0.72%	0.72%	0.72%	0.72%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	28.37%	28.37%	33.68%	23.42%	27.79%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	28.42%	28.42%	33.73%	23.42%	27.79%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Lake County Library District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$306,561	\$234,382
Allocated pre-SLGRP pooled liability/(surplus)	(16,786)	(17,155)
Transition liability/(surplus)	7,741	8,250
Allocated pooled OPSRP UAL	25,519	18,514
Side account	0	0
Net unfunded pension actuarial accrued liability	323,035	243,991
Combined valuation payroll	141,328	122,863
Net pension UAL as a percentage of payroll	229%	199%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	0.72%	0.81%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$2,072)	(\$1,408)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$13,152	\$2,237	17.17%	\$31,409	\$5,393
Tier 2 General Service	12.84%	8,294	1,065	12.64%	9,547	1,207
Total General Service		21,446	3,302		40,956	6,600
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$21,446	\$3,302		\$40,956	\$6,600
Total normal cost rate						
General Service			15.40%			16.11%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.40%			16.11%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$8,250
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.75%
B. Actual employer payroll	60,555
C. Payment to transition liability/(surplus)	454
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.75%
B. Actual employer payroll	76,597
C. Payment to transition liability/(surplus)	575
4. Supplemental payment to transition liability	0
5. Interest	520
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	\$7,741

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	7,741	8,250
2. Combined valuation payroll	141,328	122,863
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	0.72%	0.81%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	141,328	122,863
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Umatilla County Soil & Water District/2772
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.



December 2019
Umatilla County Soil & Water District/2772

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Umatilla County Soil & Water District/2772

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Umatilla County Soil & Water District -- #2772

December 2019

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 Umatilla County Soil & Water District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Umatilla County Soil & Water District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Umatilla County Soil & Water District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(2.39%)	(2.39%)	(2.39%)	(2.39%)	(2.39%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	25.64%	24.44%	30.57%	20.31%	24.68%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	25.69%	24.49%	30.62%	20.31%	24.68%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Umatilla County Soil & Water District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$442,663	\$115,256
Allocated pre-SLGRP pooled liability/(surplus)	(24,238)	(8,436)
Transition liability/(surplus)	(37,080)	(39,790)
Allocated pooled OPSRP UAL	36,848	9,104
Side account	0	0
Net unfunded pension actuarial accrued liability	418,193	76,134
Combined valuation payroll	204,072	60,417
Net pension UAL as a percentage of payroll	205%	126%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(2.39%)	(7.92%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$2,991)	(\$692)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$39,790)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(5.87%)
B. Actual employer payroll	28,345
C. Payment to transition liability/(surplus)	(1,664)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(5.87%)
B. Actual employer payroll	60,241
C. Payment to transition liability/(surplus)	(3,536)
4. Supplemental payment to transition liability	0
5. Interest	(2,490)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$37,080)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(37,080)	(39,790)
2. Combined valuation payroll	204,072	60,417
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(2.39%)	(7.92%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	204,072	60,417
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Housing Authority of Jackson County/2773
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Housing Authority of Jackson County/2773

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Housing Authority of Jackson County/2773

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Housing Authority of Jackson County -- #2773

December 2019

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Executive Summary

Milliman has prepared this report for Housing Authority of Jackson County to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Housing Authority of Jackson County.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Housing Authority of Jackson County

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	13.23%	13.23%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	1.46%	1.46%	1.46%	1.46%	1.46%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	26.94%	26.94%	34.42%	24.16%	28.53%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	26.99%	26.99%	34.47%	24.16%	28.53%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Housing Authority of Jackson County

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$6,875,876	\$5,338,580
Allocated pre-SLGRP pooled liability/(surplus)	(376,489)	(390,739)
Transition liability/(surplus)	353,128	381,885
Allocated pooled OPSRP UAL	572,362	421,706
Side account	0	0
Net unfunded pension actuarial accrued liability	7,424,877	5,751,432
Combined valuation payroll	3,169,856	2,798,480
Net pension UAL as a percentage of payroll	234%	206%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	1.46%	1.64%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$46,463)	(\$32,066)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$103,828	\$17,661	17.17%	\$157,950	\$27,120
Tier 2 General Service	12.84%	1,011,323	129,854	12.64%	977,999	123,619
Total General Service		1,115,151	147,515		1,135,949	150,739
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$1,115,151	\$147,515		\$1,135,949	\$150,739
Total normal cost rate						
General Service			13.23%			13.27%
Police & Fire			20.71%			20.83%
Aggregate (Default)			13.23%			13.27%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$381,885
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	1.67%
B. Actual employer payroll	1,521,200
C. Payment to transition liability/(surplus)	25,404
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	1.67%
B. Actual employer payroll	1,621,026
C. Payment to transition liability/(surplus)	27,071
4. Supplemental payment to transition liability	0
5. Interest	23,718
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$353,128

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	353,128	381,885
2. Combined valuation payroll	3,169,856	2,798,480
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	1.46%	1.64%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	3,169,856	2,798,480
3. Average amortization factor	7.606	8.312
4. Total side account rate $(-1. \div 2. \div 3.)^1$	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Oregon Trail Library District/2774
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Oregon Trail Library District/2774

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Oregon Trail Library District/2774

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Oregon Trail Library District -- #2774

December 2019

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Executive Summary

Milliman has prepared this report for Oregon Trail Library District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Oregon Trail Library District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Oregon Trail Library District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	12.85%	12.85%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(0.47%)	(0.47%)	(0.47%)	(0.47%)	(0.47%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	24.63%	24.63%	32.49%	22.23%	26.60%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	24.68%	24.68%	32.54%	22.23%	26.60%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Oregon Trail Library District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$471,094	\$334,835
Allocated pre-SLGRP pooled liability/(surplus)	(25,795)	(24,507)
Transition liability/(surplus)	(7,807)	(9,508)
Allocated pooled OPSRP UAL	39,215	26,449
Side account	0	0
Net unfunded pension actuarial accrued liability	476,707	327,269
Combined valuation payroll	217,180	175,520
Net pension UAL as a percentage of payroll	220%	186%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(0.47%)	(0.65%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$3,183)	(\$2,011)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	4,056	521	12.64%	3,705	468
Total General Service		4,056	521		3,705	468
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$4,056	\$521		\$3,705	\$468
Total normal cost rate						
General Service			12.85%			12.63%
Police & Fire			20.71%			20.83%
Aggregate (Default)			12.85%			12.63%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$9,508)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(1.08%)
B. Actual employer payroll	98,527
C. Payment to transition liability/(surplus)	(1,064)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(1.08%)
B. Actual employer payroll	107,492
C. Payment to transition liability/(surplus)	(1,161)
4. Supplemental payment to transition liability	0
5. Interest	(524)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$7,807)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(7,807)	(9,508)
2. Combined valuation payroll	217,180	175,520
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.47%)	(0.65%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	217,180	175,520
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Rainier Cemetery District/2776
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Rainier Cemetery District/2776

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Rainier Cemetery District/2776

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Rainier Cemetery District -- #2776

December 2019

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 Rainier Cemetery District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Rainier Cemetery District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Rainier Cemetery District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(21.71%)	(21.71%)	(21.71%)	(21.71%)	(21.71%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	7.88%	6.68%	12.81%	2.55%	6.92%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	7.93%	6.73%	12.86%	2.55%	6.92%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Rainier Cemetery District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$114,152	\$97,331
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(86,890)	(88,696)
Allocated pooled OPSRP UAL	9,502	7,688
Side account	0	0
Net unfunded pension actuarial accrued liability	36,764	16,323
Combined valuation payroll	52,625	51,021
Net pension UAL as a percentage of payroll	70%	32%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(21.71%)	(20.91%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$771)	(\$585)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$88,696)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(20.72%)
B. Actual employer payroll	24,239
C. Payment to transition liability/(surplus)	(3,713)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(20.72%)
B. Actual employer payroll	25,643
C. Payment to transition liability/(surplus)	(3,929)
4. Supplemental payment to transition liability	0
5. Interest	(5,836)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$86,890)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(86,890)	(88,696)
2. Combined valuation payroll	52,625	51,021
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(21.71%)	(20.91%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	52,625	51,021
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

City of Newberg/2777

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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
City of Newberg/2777

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
City of Newberg/2777

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Newberg -- #2777

December 2019

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 Newberg to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to City of Newberg.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for City of Newberg

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	18.08%	14.51%	20.73%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(0.79%)	(0.79%)	(0.79%)	(0.79%)	(0.79%)
Side account rate relief ²	(4.55%)	(4.55%)	(4.55%)	(4.55%)	(4.55%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	24.99%	21.42%	27.64%	17.36%	21.73%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	25.04%	21.47%	27.69%	17.36%	21.73%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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 Newberg

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$13,128,031	\$9,428,071
Allocated pre-SLGRP pooled liability/(surplus)	(718,826)	(690,055)
Transition liability/(surplus)	(363,065)	(372,225)
Allocated pooled OPSRP UAL	1,092,804	744,744
Side account	2,094,328	2,268,115
Net unfunded pension actuarial accrued liability	11,044,616	6,842,420
Combined valuation payroll	6,052,171	4,942,188
Net pension UAL as a percentage of payroll	182%	138%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(0.79%)	(0.91%)
Side account rate relief	(4.55%)	(5.52%)
Allocated pooled RHIA UAL	(\$88,711)	(\$56,629)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$502,921	\$85,547	17.17%	\$481,837	\$82,731
Tier 2 General Service	12.84%	749,918	96,289	12.64%	709,746	89,712
Total General Service		1,252,839	181,836		1,191,583	172,443
Tier 1 Police & Fire	22.20%	563,550	125,108	22.26%	654,098	145,602
Tier 2 Police & Fire	20.00%	1,125,309	225,062	20.05%	1,004,740	201,450
Total Police & Fire		1,688,859	350,170		1,658,838	347,052
Total		\$2,941,698	\$532,006		\$2,850,421	\$519,495
Total normal cost rate						
General Service			14.51%			14.47%
Police & Fire			20.73%			20.92%
Aggregate (Default)			18.08%			18.23%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$372,225)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(0.61%)
B. Actual employer payroll	2,629,504
C. Payment to transition liability/(surplus)	(16,040)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(0.61%)
B. Actual employer payroll	2,869,582
C. Payment to transition liability/(surplus)	(17,505)
4. Supplemental payment to transition liability	0
5. Interest	(24,385)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$363,065)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(363,065)	(372,225)
2. Combined valuation payroll	6,052,171	4,942,188
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.79%)	(0.91%)

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, 2017	N/A	\$2,268,115	\$2,268,115
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(185,842)	(185,842)
5. Side account earnings during 2018		12,556	12,556
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$2,094,328	\$2,094,328

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$2,094,328	\$2,268,115
Side Account 2	0	0
Side Account 3	0	0
Total	\$2,094,328	\$2,268,115

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$2,094,328	\$2,268,115
2. Combined valuation payroll	6,052,171	4,942,188
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(4.55%)	(5.52%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Mulino Water District #23/2778
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Mulino Water District #23/2778

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Mulino Water District #23/2778

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Mulino Water District #23 -- #2778

December 2019

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 Mulino Water District #23 to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Mulino Water District #23.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Mulino Water District #23

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	12.84%	12.84%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	0.20%	0.20%	0.20%	0.20%	0.20%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	25.29%	25.29%	33.16%	22.90%	27.27%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	25.34%	25.34%	33.21%	22.90%	27.27%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Mulino Water District #23

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$147,660	\$128,472
Allocated pre-SLGRP pooled liability/(surplus)	(8,085)	(9,403)
Transition liability/(surplus)	1,045	1,099
Allocated pooled OPSRP UAL	12,292	10,148
Side account	0	0
Net unfunded pension actuarial accrued liability	152,912	130,316
Combined valuation payroll	68,073	67,345
Net pension UAL as a percentage of payroll	225%	194%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	0.20%	0.20%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$998)	(\$772)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	68,073	8,741	12.64%	67,345	8,512
Total General Service		68,073	8,741		67,345	8,512
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$68,073	\$8,741		\$67,345	\$8,512
Total normal cost rate						
General Service			12.84%			12.64%
Police & Fire			20.71%			20.83%
Aggregate (Default)			12.84%			12.64%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$1,099
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.19%
B. Actual employer payroll	32,307
C. Payment to transition liability/(surplus)	61
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.19%
B. Actual employer payroll	33,179
C. Payment to transition liability/(surplus)	63
4. Supplemental payment to transition liability	0
5. Interest	70
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$1,045

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	1,045	1,099
2. Combined valuation payroll	68,073	67,345
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	0.20%	0.20%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	68,073	67,345
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

North Bend Coos-Curry Housing Authority/2781
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
North Bend Coos-Curry Housing Authority/2781

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
North Bend Coos-Curry Housing Authority/2781

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

North Bend Coos-Curry Housing Authority -- #2781

December 2019

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 North Bend Coos-Curry Housing Authority to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to North Bend Coos-Curry Housing Authority.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for North Bend Coos-Curry Housing Authority

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	22.18%	22.18%	22.18%	22.18%	22.18%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	50.21%	49.01%	55.14%	44.88%	49.25%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	50.26%	49.06%	55.19%	44.88%	49.25%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

North Bend Coos-Curry Housing Authority

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$1,204,873	\$809,974
Allocated pre-SLGRP pooled liability/(surplus)	(65,973)	(59,283)
Transition liability/(surplus)	937,119	1,049,998
Allocated pooled OPSRP UAL	100,296	63,982
Side account	0	0
Net unfunded pension actuarial accrued liability	2,176,315	1,864,671
Combined valuation payroll	555,460	424,588
Net pension UAL as a percentage of payroll	392%	439%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	22.18%	29.75%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$8,142)	(\$4,865)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$1,049,998
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	33.73%
B. Actual employer payroll	249,607
C. Payment to transition liability/(surplus)	84,193
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	33.73%
B. Actual employer payroll	271,649
C. Payment to transition liability/(surplus)	91,627
4. Supplemental payment to transition liability	0
5. Interest	62,941
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	\$937,119

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	937,119	1,049,998
2. Combined valuation payroll	555,460	424,588
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	22.18%	29.75%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	555,460	424,588
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Eisenschmidt Pool/2784
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Eisenschmidt Pool/2784

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Eisenschmidt Pool/2784

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Eisenschmidt Pool -- #2784

December 2019

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Executive Summary

Milliman has prepared this report for Eisenschmidt Pool to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Eisenschmidt Pool.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Eisenschmidt Pool

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	12.84%	12.84%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(3.50%)	(3.50%)	(3.50%)	(3.50%)	(3.50%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	23.15%	23.15%	31.02%	20.76%	25.13%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	23.20%	23.20%	31.07%	20.76%	25.13%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Eisenschmidt Pool

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$536,502	\$409,100
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(65,856)	(70,260)
Allocated pooled OPSRP UAL	44,660	32,316
Side account	0	0
Net unfunded pension actuarial accrued liability	515,306	371,156
Combined valuation payroll	247,334	214,450
Net pension UAL as a percentage of payroll	208%	173%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(3.50%)	(3.94%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$3,625)	(\$2,457)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	135,375	17,382	12.64%	128,650	16,261
Total General Service		135,375	17,382		128,650	16,261
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$135,375	\$17,382		\$128,650	\$16,261
Total normal cost rate						
General Service			12.84%			12.64%
Police & Fire			20.71%			20.83%
Aggregate (Default)			12.84%			12.64%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$70,260)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(3.83%)
B. Actual employer payroll	106,496
C. Payment to transition liability/(surplus)	(4,079)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(3.83%)
B. Actual employer payroll	123,976
C. Payment to transition liability/(surplus)	(4,748)
4. Supplemental payment to transition liability	0
5. Interest	(4,423)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$65,856)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(65,856)	(70,260)
2. Combined valuation payroll	247,334	214,450
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(3.50%)	(3.94%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	247,334	214,450
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Seal Rock Rural Fire Protection District/2786
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Seal Rock Rural Fire Protection District/2786

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Seal Rock Rural Fire Protection District/2786

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Seal Rock Rural Fire Protection District -- #2786

December 2019

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Executive Summary

Milliman has prepared this report for Seal Rock Rural Fire Protection District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Seal Rock Rural Fire Protection District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Seal Rock Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(3.37%)	(3.37%)	(3.37%)	(3.37%)	(3.37%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	24.66%	23.46%	29.59%	19.33%	23.70%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	24.71%	23.51%	29.64%	19.33%	23.70%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Seal Rock Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$364,948	\$122,473
Allocated pre-SLGRP pooled liability/(surplus)	(19,983)	(8,964)
Transition liability/(surplus)	(43,077)	(56,560)
Allocated pooled OPSRP UAL	30,379	9,674
Side account	0	0
Net unfunded pension actuarial accrued liability	332,267	66,623
Combined valuation payroll	168,245	64,200
Net pension UAL as a percentage of payroll	197%	104%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(3.37%)	(10.60%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$2,466)	(\$736)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$56,560)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(11.14%)
B. Actual employer payroll	75,000
C. Payment to transition liability/(surplus)	(8,355)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(11.14%)
B. Actual employer payroll	72,000
C. Payment to transition liability/(surplus)	(8,021)
4. Supplemental payment to transition liability	0
5. Interest	(2,893)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$43,077)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(43,077)	(56,560)
2. Combined valuation payroll	168,245	64,200
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(3.37%)	(10.60%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	168,245	64,200
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Farmers Irrigation District/2789
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Farmers Irrigation District/2789

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Farmers Irrigation District/2789

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Farmers Irrigation District -- #2789

December 2019

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Executive Summary

Milliman has prepared this report for Farmers Irrigation District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Farmers Irrigation District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Farmers Irrigation District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.73%	15.73%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(12.73%)	(12.73%)	(12.73%)	(12.73%)	(12.73%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	16.81%	16.81%	21.79%	11.53%	15.90%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	16.86%	16.86%	21.84%	11.53%	15.90%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Farmers Irrigation District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$1,183,297	\$998,412
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(528,220)	(573,234)
Allocated pooled OPSRP UAL	98,500	78,867
Side account	0	0
Net unfunded pension actuarial accrued liability	753,577	504,045
Combined valuation payroll	545,513	523,367
Net pension UAL as a percentage of payroll	138%	96%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(12.73%)	(13.18%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$7,996)	(\$5,997)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$138,828	\$23,615	17.17%	\$135,326	\$23,235
Tier 2 General Service	12.84%	61,169	7,854	12.64%	59,178	7,480
Total General Service		199,997	31,469		194,504	30,715
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$199,997	\$31,469		\$194,504	\$30,715
Total normal cost rate						
General Service			15.73%			15.79%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.73%			15.79%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$573,234)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(15.64%)
B. Actual employer payroll	259,483
C. Payment to transition liability/(surplus)	(40,061)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(15.64%)
B. Actual employer payroll	261,883
C. Payment to transition liability/(surplus)	(40,430)
4. Supplemental payment to transition liability	0
5. Interest	(35,477)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$528,220)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(528,220)	(573,234)
2. Combined valuation payroll	545,513	523,367
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(12.73%)	(13.18%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	545,513	523,367
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Silver Falls Library District/2790
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Silver Falls Library District/2790

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Silver Falls Library District/2790

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Silver Falls Library District -- #2790

December 2019

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Executive Summary

Milliman has prepared this report for Silver Falls Library District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Silver Falls Library District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Silver Falls Library District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.99%	14.99%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(1.90%)	(1.90%)	(1.90%)	(1.90%)	(1.90%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	26.90%	26.90%	32.62%	22.36%	26.73%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	26.95%	26.95%	32.67%	22.36%	26.73%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Silver Falls Library District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$1,115,369	\$711,477
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(74,172)	(79,551)
Allocated pooled OPSRP UAL	92,846	56,201
Side account	0	0
Net unfunded pension actuarial accrued liability	1,134,043	688,127
Combined valuation payroll	514,198	372,956
Net pension UAL as a percentage of payroll	221%	185%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(1.90%)	(2.57%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$7,537)	(\$4,273)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$91,102	\$15,496	17.17%	\$85,090	\$14,610
Tier 2 General Service	12.84%	85,817	11,019	12.64%	66,315	8,382
Total General Service		176,919	26,515		151,405	22,992
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$176,919	\$26,515		\$151,405	\$22,992
Total normal cost rate						
General Service			14.99%			15.19%
Police & Fire			20.71%			20.83%
Aggregate (Default)			14.99%			15.19%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$79,551)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(2.07%)
B. Actual employer payroll	222,314
C. Payment to transition liability/(surplus)	(4,602)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(2.07%)
B. Actual employer payroll	278,201
C. Payment to transition liability/(surplus)	(5,759)
4. Supplemental payment to transition liability	0
5. Interest	(4,982)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$74,172)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(74,172)	(79,551)
2. Combined valuation payroll	514,198	372,956
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(1.90%)	(2.57%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	514,198	372,956
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

North Wasco County Parks And Recreation District/2792
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
North Wasco County Parks And Recreation District/2792

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
North Wasco County Parks And Recreation District/2792

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

North Wasco County Parks And Recreation District -- #2792

December 2019

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Executive Summary

Milliman has prepared this report for North Wasco County Parks And Recreation District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to North Wasco County Parks And Recreation District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for North Wasco County Parks And Recreation District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	17.01%	17.01%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	29.26%	29.26%	32.96%	22.70%	27.07%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	29.31%	29.31%	33.01%	22.70%	27.07%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

North Wasco County Parks And Recreation District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$522,589	\$482,440
Allocated pre-SLGRP pooled liability/(surplus)	(28,614)	(35,310)
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	43,501	38,109
Side account	0	0
Net unfunded pension actuarial accrued liability	537,476	485,239
Combined valuation payroll	240,919	252,895
Net pension UAL as a percentage of payroll	223%	192%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	0.00%	0.00%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$3,531)	(\$2,898)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$49,495	\$8,419	17.17%	\$97,760	\$16,785
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		49,495	8,419		97,760	16,785
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$49,495	\$8,419		\$97,760	\$16,785
Total normal cost rate						
General Service			17.01%			17.17%
Police & Fire			20.71%			20.83%
Aggregate (Default)			17.01%			17.17%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	240,919	252,895
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	240,919	252,895
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

North Lincoln Fire & Rescue District #1/2793
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
North Lincoln Fire & Rescue District #1/2793

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
North Lincoln Fire & Rescue District #1/2793

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

North Lincoln Fire & Rescue District #1 -- #2793

December 2019

Secondary Employers

2711 Devils Lake Rural Fire Protection District

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Executive Summary

Milliman has prepared this report for North Lincoln Fire & Rescue District #1 to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to North Lincoln Fire & Rescue District #1.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for North Lincoln Fire & Rescue District #1

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	20.00%	14.58%	20.00%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(1.48%)	(1.48%)	(1.48%)	(1.48%)	(1.48%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	32.33%	26.91%	32.33%	22.78%	27.15%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	32.38%	26.96%	32.38%	22.78%	27.15%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

North Lincoln Fire & Rescue District #1

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$2,922,370	\$1,524,110
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(151,452)	(186,697)
Allocated pooled OPSRP UAL	243,264	120,393
Side account	0	0
Net unfunded pension actuarial accrued liability	3,014,182	1,457,806
Combined valuation payroll	1,347,246	798,937
Net pension UAL as a percentage of payroll	224%	182%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(1.48%)	(2.81%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$19,748)	(\$9,154)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	395,373	79,075	20.05%	298,979	59,945
Total Police & Fire		395,373	79,075		298,979	59,945
Total		\$395,373	\$79,075		\$298,979	\$59,945
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.00%			20.05%
Aggregate (Default)			20.00%			20.05%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$186,697)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(3.60%)
B. Actual employer payroll	572,221
C. Payment to transition liability/(surplus)	(20,600)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(3.60%)
B. Actual employer payroll	689,356
C. Payment to transition liability/(surplus)	(24,817)
4. Supplemental payment to transition liability	0
5. Interest	(10,172)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$151,452)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(151,452)	(186,697)
2. Combined valuation payroll	1,347,246	798,937
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(1.48%)	(2.81%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	1,347,246	798,937
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Siuslaw Rural Fire Protection District #1/2794
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Siuslaw Rural Fire Protection District #1/2794

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Siuslaw Rural Fire Protection District #1/2794

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Siuslaw Rural Fire Protection District #1 -- #2794

December 2019

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Executive Summary

Milliman has prepared this report for Siuslaw Rural Fire Protection District #1 to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Siuslaw Rural Fire Protection District #1.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Siuslaw Rural Fire Protection District #1

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(0.25%)	(0.25%)	(0.25%)	(0.25%)	(0.25%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	29.34%	28.14%	34.27%	24.01%	28.38%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	29.39%	28.19%	34.32%	24.01%	28.38%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Siuslaw Rural Fire Protection District #1

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$1,778,836	\$1,684,419
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(15,839)	(17,896)
Allocated pooled OPSRP UAL	148,074	133,056
Side account	0	0
Net unfunded pension actuarial accrued liability	1,911,071	1,799,579
Combined valuation payroll	820,063	882,971
Net pension UAL as a percentage of payroll	233%	204%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(0.25%)	(0.24%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$12,020)	(\$10,117)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	48,857	10,876
Tier 2 Police & Fire	20.00%	0	0	20.05%	1,330	267
Total Police & Fire		0	0		50,187	11,143
Total		\$0	\$0		\$50,187	\$11,143
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			22.20%
Aggregate (Default)			15.78%			22.20%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$17,896)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(0.40%)
B. Actual employer payroll	345,845
C. Payment to transition liability/(surplus)	(1,383)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(0.40%)
B. Actual employer payroll	434,642
C. Payment to transition liability/(surplus)	(1,738)
4. Supplemental payment to transition liability	0
5. Interest	(1,064)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$15,839)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(15,839)	(17,896)
2. Combined valuation payroll	820,063	882,971
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.25%)	(0.24%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	820,063	882,971
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Fairview Water District/2798
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Fairview Water District/2798

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Fairview Water District/2798

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Fairview Water District -- #2798

December 2019

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Executive Summary

Milliman has prepared this report for Fairview Water District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Fairview Water District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Fairview Water District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(1.75%)	(1.75%)	(1.75%)	(1.75%)	(1.75%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	26.28%	25.08%	31.21%	20.95%	25.32%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	26.33%	25.13%	31.26%	20.95%	25.32%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Fairview Water District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$209,742	\$108,908
Allocated pre-SLGRP pooled liability/(surplus)	(11,484)	(7,971)
Transition liability/(surplus)	(12,903)	(14,281)
Allocated pooled OPSRP UAL	17,459	8,603
Side account	0	0
Net unfunded pension actuarial accrued liability	202,814	95,259
Combined valuation payroll	96,694	57,090
Net pension UAL as a percentage of payroll	210%	167%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(1.75%)	(3.01%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$1,417)	(\$654)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$14,281)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(2.71%)
B. Actual employer payroll	36,778
C. Payment to transition liability/(surplus)	(997)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(2.71%)
B. Actual employer payroll	46,066
C. Payment to transition liability/(surplus)	(1,248)
4. Supplemental payment to transition liability	0
5. Interest	(867)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$12,903)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(12,903)	(14,281)
2. Combined valuation payroll	96,694	57,090
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(1.75%)	(3.01%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	96,694	57,090
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Sublimity Fire District/2799
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Sublimity Fire District/2799

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Sublimity Fire District/2799

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Sublimity Fire District -- #2799

December 2019

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Executive Summary

Milliman has prepared this report for Sublimity Fire District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Sublimity Fire District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Sublimity Fire District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	12.84%	12.84%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(8.71%)	(8.71%)	(8.71%)	(8.71%)	(8.71%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	17.94%	17.94%	25.81%	15.55%	19.92%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	17.99%	17.99%	25.86%	15.55%	19.92%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Sublimity Fire District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$327,688	\$223,001
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(100,103)	(107,622)
Allocated pooled OPSRP UAL	27,277	17,615
Side account	0	0
Net unfunded pension actuarial accrued liability	254,862	132,994
Combined valuation payroll	151,068	116,897
Net pension UAL as a percentage of payroll	169%	114%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(8.71%)	(11.08%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$2,214)	(\$1,339)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	36,689	4,711	12.64%	35,451	4,481
Total General Service		36,689	4,711		35,451	4,481
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$36,689	\$4,711		\$35,451	\$4,481
Total normal cost rate						
General Service			12.84%			12.64%
Police & Fire			20.71%			20.83%
Aggregate (Default)			12.84%			12.64%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$107,622)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(10.51%)
B. Actual employer payroll	56,943
C. Payment to transition liability/(surplus)	(5,985)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(10.51%)
B. Actual employer payroll	78,566
C. Payment to transition liability/(surplus)	(8,257)
4. Supplemental payment to transition liability	0
5. Interest	(6,723)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$100,103)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(100,103)	(107,622)
2. Combined valuation payroll	151,068	116,897
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(8.71%)	(11.08%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	151,068	116,897
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Coburg Rural Fire Protection District/2801
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Coburg Rural Fire Protection District/2801

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Coburg Rural Fire Protection District/2801

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Coburg Rural Fire Protection District -- #2801

December 2019

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 Coburg Rural Fire Protection District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Coburg Rural Fire Protection District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Coburg Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	20.22%	14.58%	20.22%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(3.86%)	(3.86%)	(3.86%)	(3.86%)	(3.86%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	30.17%	24.53%	30.17%	20.40%	24.77%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	30.22%	24.58%	30.22%	20.40%	24.77%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Coburg Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$418,845	\$280,740
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(56,640)	(69,469)
Allocated pooled OPSRP UAL	34,866	22,176
Side account	0	0
Net unfunded pension actuarial accrued liability	397,071	233,447
Combined valuation payroll	193,092	147,163
Net pension UAL as a percentage of payroll	206%	159%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(3.86%)	(5.68%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$2,830)	(\$1,686)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$11,333	\$1,946
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		11,333	1,946
Tier 1 Police & Fire	22.20%	12,478	2,770	22.26%	12,479	2,778
Tier 2 Police & Fire	20.00%	112,198	22,440	20.05%	117,123	23,483
Total Police & Fire		124,676	25,210		129,602	26,261
Total		\$124,676	\$25,210		\$140,935	\$28,207
Total normal cost rate						
General Service			14.58%			17.17%
Police & Fire			20.22%			20.26%
Aggregate (Default)			20.22%			20.01%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$69,469)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(6.50%)
B. Actual employer payroll	95,040
C. Payment to transition liability/(surplus)	(6,178)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(6.50%)
B. Actual employer payroll	160,857
C. Payment to transition liability/(surplus)	(10,455)
4. Supplemental payment to transition liability	0
5. Interest	(3,804)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$56,640)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(56,640)	(69,469)
2. Combined valuation payroll	193,092	147,163
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(3.86%)	(5.68%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	193,092	147,163
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Rural Road Assessment District #3/2802
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Rural Road Assessment District #3/2802

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Rural Road Assessment District #3/2802

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Rural Road Assessment District #3 -- #2802

December 2019

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Executive Summary

Milliman has prepared this report for Rural Road Assessment District #3 to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Rural Road Assessment District #3.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Rural Road Assessment District #3

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	0.24%	0.24%	0.24%	0.24%	0.24%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	28.27%	27.07%	33.20%	22.94%	27.31%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	28.32%	27.12%	33.25%	22.94%	27.31%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Rural Road Assessment District #3

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$390,494	\$435,652
Allocated pre-SLGRP pooled liability/(surplus)	(21,382)	(31,886)
Transition liability/(surplus)	3,248	3,526
Allocated pooled OPSRP UAL	32,506	34,413
Side account	0	0
Net unfunded pension actuarial accrued liability	404,866	441,705
Combined valuation payroll	180,022	228,369
Net pension UAL as a percentage of payroll	225%	193%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	0.24%	0.19%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$2,639)	(\$2,617)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	53,400	6,750
Total General Service		0	0		53,400	6,750
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$53,400	\$6,750
Total normal cost rate						
General Service			14.58%			12.64%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			12.64%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$3,526
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.23%
B. Actual employer payroll	113,918
C. Payment to transition liability/(surplus)	262
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.23%
B. Actual employer payroll	101,985
C. Payment to transition liability/(surplus)	234
4. Supplemental payment to transition liability	0
5. Interest	218
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$3,248

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	3,248	3,526
2. Combined valuation payroll	180,022	228,369
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	0.24%	0.19%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	180,022	228,369
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Aurora Rural Fire Protection District/2804
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Aurora Rural Fire Protection District/2804

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Aurora Rural Fire Protection District/2804

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Aurora Rural Fire Protection District -- #2804

December 2019

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 Aurora Rural Fire Protection District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Aurora Rural Fire Protection District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Aurora Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	20.00%	14.58%	20.00%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(9.47%)	(9.47%)	(9.47%)	(9.47%)	(9.47%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	24.34%	18.92%	24.34%	14.79%	19.16%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	24.39%	18.97%	24.39%	14.79%	19.16%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Aurora Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$820,498	\$378,634
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(272,372)	(287,731)
Allocated pooled OPSRP UAL	68,300	29,909
Side account	0	0
Net unfunded pension actuarial accrued liability	616,426	120,812
Combined valuation payroll	378,259	198,479
Net pension UAL as a percentage of payroll	163%	61%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(9.47%)	(17.44%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$5,544)	(\$2,274)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	88,426	17,685	20.05%	72,260	14,488
Total Police & Fire		88,426	17,685		72,260	14,488
Total		\$88,426	\$17,685		\$72,260	\$14,488
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.00%			20.05%
Aggregate (Default)			20.00%			20.05%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$287,731)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(10.41%)
B. Actual employer payroll	145,451
C. Payment to transition liability/(surplus)	(15,141)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(10.41%)
B. Actual employer payroll	177,827
C. Payment to transition liability/(surplus)	(18,512)
4. Supplemental payment to transition liability	0
5. Interest	(18,294)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$272,372)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(272,372)	(287,731)
2. Combined valuation payroll	378,259	198,479
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(9.47%)	(17.44%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	378,259	198,479
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Multnomah County Rural Fire Protection District #14/2806
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.



December 2019
Multnomah County Rural Fire Protection District #14/2806

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Multnomah County Rural Fire Protection District #14/2806

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Multnomah County Rural Fire Protection District #14 -- #2806

December 2019

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 Multnomah County Rural Fire Protection District #14 to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Multnomah County Rural Fire Protection District #14.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Multnomah County Rural Fire Protection District #14

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(0.31%)	(0.31%)	(0.31%)	(0.31%)	(0.31%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	27.72%	26.52%	32.65%	22.39%	26.76%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	27.77%	26.57%	32.70%	22.39%	26.76%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Multnomah County Rural Fire Protection District #14

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$47,474	\$0
Allocated pre-SLGRP pooled liability/(surplus)	(2,599)	0
Transition liability/(surplus)	(508)	(489)
Allocated pooled OPSRP UAL	3,952	0
Side account	0	0
Net unfunded pension actuarial accrued liability	48,319	(489)
Combined valuation payroll	21,886	0
Net pension UAL as a percentage of payroll	221%	0%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(0.31%)	0.00%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$321)	\$0
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$489)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(0.10%)
B. Actual employer payroll	3,757
C. Payment to transition liability/(surplus)	(4)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(0.10%)
B. Actual employer payroll	11,556
C. Payment to transition liability/(surplus)	(11)
4. Supplemental payment to transition liability	0
5. Interest	(34)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$508)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(508)	(489)
2. Combined valuation payroll	21,886	0
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.31%)	0.00%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	21,886	0
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Sutherlin Water Control District/2810
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Sutherlin Water Control District/2810

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Sutherlin Water Control District/2810

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Sutherlin Water Control District -- #2810

December 2019

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Executive Summary

Milliman has prepared this report for Sutherlin Water Control District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Sutherlin Water Control District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Sutherlin Water Control District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(0.99%)	(0.99%)	(0.99%)	(0.99%)	(0.99%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	27.04%	25.84%	31.97%	21.71%	26.08%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	27.09%	25.89%	32.02%	21.71%	26.08%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Sutherlin Water Control District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$198,388	\$137,966
Allocated pre-SLGRP pooled liability/(surplus)	(10,863)	(10,098)
Transition liability/(surplus)	(6,862)	(7,761)
Allocated pooled OPSRP UAL	16,514	10,898
Side account	0	0
Net unfunded pension actuarial accrued liability	197,177	131,005
Combined valuation payroll	91,459	72,322
Net pension UAL as a percentage of payroll	216%	181%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(0.99%)	(1.29%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$1,341)	(\$829)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$7,761)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(1.56%)
B. Actual employer payroll	43,095
C. Payment to transition liability/(surplus)	(672)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(1.56%)
B. Actual employer payroll	44,072
C. Payment to transition liability/(surplus)	(688)
4. Supplemental payment to transition liability	0
5. Interest	(461)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$6,862)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(6,862)	(7,761)
2. Combined valuation payroll	91,459	72,322
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.99%)	(1.29%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	91,459	72,322
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Mid-Columbia Center For Living/2811
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Mid-Columbia Center For Living/2811

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Mid-Columbia Center For Living/2811

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Mid-Columbia Center For Living -- #2811

December 2019

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 Mid-Columbia Center For Living to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Mid-Columbia Center For Living.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Mid-Columbia Center For Living

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.36%	14.36%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	0.15%	0.15%	0.15%	0.15%	0.15%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	26.76%	26.76%	33.11%	22.85%	27.22%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	26.81%	26.81%	33.16%	22.85%	27.22%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Mid-Columbia Center For Living

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$13,759,779	\$11,613,627
Allocated pre-SLGRP pooled liability/(surplus)	(753,417)	(850,019)
Transition liability/(surplus)	71,065	78,065
Allocated pooled OPSRP UAL	1,145,392	917,386
Side account	0	0
Net unfunded pension actuarial accrued liability	14,222,819	11,759,059
Combined valuation payroll	6,343,414	6,087,855
Net pension UAL as a percentage of payroll	224%	193%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	0.15%	0.15%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$92,980)	(\$69,756)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$268,909	\$45,741	17.17%	\$330,072	\$56,673
Tier 2 General Service	12.84%	468,172	60,113	12.64%	795,137	100,505
Total General Service		737,081	105,854		1,125,209	157,178
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$737,081	\$105,854		\$1,125,209	\$157,178

Total normal cost rate

General Service	14.36%	13.97%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.36%	13.97%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$78,065
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.18%
B. Actual employer payroll	3,362,973
C. Payment to transition liability/(surplus)	6,053
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.18%
B. Actual employer payroll	3,177,531
C. Payment to transition liability/(surplus)	5,720
4. Supplemental payment to transition liability	0
5. Interest	4,773
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$71,065

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	71,065	78,065
2. Combined valuation payroll	6,343,414	6,087,855
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	0.15%	0.15%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	6,343,414	6,087,855
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Odell Sanitary District/2816
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Odell Sanitary District/2816

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Odell Sanitary District/2816

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Odell Sanitary District -- #2816

December 2019

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Executive Summary

Milliman has prepared this report for Odell Sanitary District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Odell Sanitary District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Odell Sanitary District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	12.84%	12.84%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(0.75%)	(0.75%)	(0.75%)	(0.75%)	(0.75%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	25.90%	25.90%	33.77%	23.51%	27.88%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	25.95%	25.95%	33.82%	23.51%	27.88%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Odell Sanitary District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$586,502	\$495,143
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(15,341)	(16,347)
Allocated pooled OPSRP UAL	48,822	39,112
Side account	0	0
Net unfunded pension actuarial accrued liability	619,983	517,908
Combined valuation payroll	270,384	259,553
Net pension UAL as a percentage of payroll	229%	200%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(0.75%)	(0.76%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$3,963)	(\$2,974)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	51,638	6,630	12.64%	51,660	6,530
Total General Service		51,638	6,630		51,660	6,530
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$51,638	\$6,630		\$51,660	\$6,530
Total normal cost rate						
General Service			12.84%			12.64%
Police & Fire			20.71%			20.83%
Aggregate (Default)			12.84%			12.64%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$16,347)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(0.79%)
B. Actual employer payroll	126,871
C. Payment to transition liability/(surplus)	(1,002)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(0.79%)
B. Actual employer payroll	130,848
C. Payment to transition liability/(surplus)	(1,034)
4. Supplemental payment to transition liability	0
5. Interest	(1,030)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$15,341)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(15,341)	(16,347)
2. Combined valuation payroll	270,384	259,553
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.75%)	(0.76%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	270,384	259,553
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Wickiup Water District/2817
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Wickiup Water District/2817

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Wickiup Water District/2817

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Wickiup Water District -- #2817

December 2019

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Executive Summary

Milliman has prepared this report for Wickiup Water District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Wickiup Water District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Wickiup Water District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(0.13%)	(0.13%)	(0.13%)	(0.13%)	(0.13%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	27.90%	26.70%	32.83%	22.57%	26.94%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	27.95%	26.75%	32.88%	22.57%	26.94%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Wickiup Water District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$240,029	\$193,033
Allocated pre-SLGRP pooled liability/(surplus)	(13,143)	(14,128)
Transition liability/(surplus)	(1,133)	(1,150)
Allocated pooled OPSRP UAL	19,980	15,248
Side account	0	0
Net unfunded pension actuarial accrued liability	245,733	193,003
Combined valuation payroll	110,656	101,188
Net pension UAL as a percentage of payroll	222%	191%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(0.13%)	(0.14%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$1,622)	(\$1,159)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$1,150)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(0.13%)
B. Actual employer payroll	29,243
C. Payment to transition liability/(surplus)	(38)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(0.13%)
B. Actual employer payroll	42,278
C. Payment to transition liability/(surplus)	(55)
4. Supplemental payment to transition liability	0
5. Interest	(76)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$1,133)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(1,133)	(1,150)
2. Combined valuation payroll	110,656	101,188
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.13%)	(0.14%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	110,656	101,188
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Netarts Water District/2818
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Netarts Water District/2818

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Netarts Water District/2818

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Netarts Water District -- #2818

December 2019

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 Netarts Water District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Netarts Water District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Netarts Water District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	12.84%	12.84%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(2.68%)	(2.68%)	(2.68%)	(2.68%)	(2.68%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	22.41%	22.41%	30.28%	20.02%	24.39%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	22.46%	22.46%	30.33%	20.02%	24.39%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Netarts Water District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$243,805	\$217,146
Allocated pre-SLGRP pooled liability/(surplus)	(13,350)	(15,893)
Transition liability/(surplus)	(22,910)	(24,513)
Allocated pooled OPSRP UAL	20,295	17,153
Side account	0	0
Net unfunded pension actuarial accrued liability	227,840	193,893
Combined valuation payroll	112,397	113,828
Net pension UAL as a percentage of payroll	203%	170%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(2.68%)	(2.59%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$1,647)	(\$1,304)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	112,397	14,432	12.64%	113,828	14,388
Total General Service		112,397	14,432		113,828	14,388
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$112,397	\$14,432		\$113,828	\$14,388
Total normal cost rate						
General Service			12.84%			12.64%
Police & Fire			20.71%			20.83%
Aggregate (Default)			12.84%			12.64%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$24,513)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(2.02%)
B. Actual employer payroll	72,613
C. Payment to transition liability/(surplus)	(1,467)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(2.02%)
B. Actual employer payroll	82,911
C. Payment to transition liability/(surplus)	(1,675)
4. Supplemental payment to transition liability	0
5. Interest	(1,539)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$22,910)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(22,910)	(24,513)
2. Combined valuation payroll	112,397	113,828
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(2.68%)	(2.59%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	112,397	113,828
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Harrisburg Fire-Rescue/2819
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Harrisburg Fire-Rescue/2819

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Harrisburg Fire-Rescue/2819

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Harrisburg Fire-Rescue -- #2819

December 2019

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Executive Summary

Milliman has prepared this report for Harrisburg Fire-Rescue to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Harrisburg Fire-Rescue.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Harrisburg Fire-Rescue

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	20.00%	14.58%	20.00%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(0.92%)	(0.92%)	(0.92%)	(0.92%)	(0.92%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	31.33%	25.91%	31.33%	21.78%	26.15%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	31.38%	25.96%	31.38%	21.78%	26.15%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Harrisburg Fire-Rescue

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$281,064	\$297,353
Allocated pre-SLGRP pooled liability/(surplus)	(15,390)	(21,764)
Transition liability/(surplus)	(9,081)	(9,904)
Allocated pooled OPSRP UAL	23,396	23,489
Side account	0	0
Net unfunded pension actuarial accrued liability	279,989	289,174
Combined valuation payroll	129,574	155,872
Net pension UAL as a percentage of payroll	216%	186%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(0.92%)	(0.76%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$1,899)	(\$1,786)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	14,269	2,854	20.05%	13,521	2,711
Total Police & Fire		14,269	2,854		13,521	2,711
Total		\$14,269	\$2,854		\$13,521	\$2,711
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.00%			20.05%
Aggregate (Default)			20.00%			20.05%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$9,904)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(0.82%)
B. Actual employer payroll	76,458
C. Payment to transition liability/(surplus)	(627)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(0.82%)
B. Actual employer payroll	98,268
C. Payment to transition liability/(surplus)	(806)
4. Supplemental payment to transition liability	0
5. Interest	(610)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$9,081)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(9,081)	(9,904)
2. Combined valuation payroll	129,574	155,872
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.92%)	(0.76%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	129,574	155,872
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Central Oregon Coast Fire & Rescue District/2820
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Central Oregon Coast Fire & Rescue District/2820

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Central Oregon Coast Fire & Rescue District/2820

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Central Oregon Coast Fire & Rescue District -- #2820

December 2019

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 Central Oregon Coast Fire & Rescue District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Central Oregon Coast Fire & Rescue District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Central Oregon Coast Fire & Rescue District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(13.55%)	(13.55%)	(13.55%)	(13.55%)	(13.55%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	16.04%	14.84%	20.97%	10.71%	15.08%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	16.09%	14.89%	21.02%	10.71%	15.08%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Central Oregon Coast Fire & Rescue District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$652,339	\$217,708
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(309,907)	(307,744)
Allocated pooled OPSRP UAL	54,302	17,197
Side account	0	0
Net unfunded pension actuarial accrued liability	396,734	(72,839)
Combined valuation payroll	300,736	114,122
Net pension UAL as a percentage of payroll	132%	(64%)
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(13.55%)	(32.44%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$4,408)	(\$1,308)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$307,744)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(7.16%)
B. Actual employer payroll	129,327
C. Payment to transition liability/(surplus)	(9,260)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(7.16%)
B. Actual employer payroll	131,173
C. Payment to transition liability/(surplus)	(9,392)
4. Supplemental payment to transition liability	0
5. Interest	(20,815)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$309,907)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(309,907)	(307,744)
2. Combined valuation payroll	300,736	114,122
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(13.55%)	(32.44%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	300,736	114,122
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Lyons Fire District/2823
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Lyons Fire District/2823

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Lyons Fire District/2823

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Lyons Fire District -- #2823

December 2019

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 Lyons Fire District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Lyons Fire District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Lyons Fire District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	0.71%	0.71%	0.71%	0.71%	0.71%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	30.30%	29.10%	35.23%	24.97%	29.34%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	30.35%	29.15%	35.28%	24.97%	29.34%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Lyons Fire District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$172,792	\$25,527
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	4,303	4,428
Allocated pooled OPSRP UAL	14,384	2,016
Side account	0	0
Net unfunded pension actuarial accrued liability	191,479	31,971
Combined valuation payroll	79,659	13,381
Net pension UAL as a percentage of payroll	240%	239%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	0.71%	3.98%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$1,168)	(\$153)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$4,428
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.97%
B. Actual employer payroll	16,828
C. Payment to transition liability/(surplus)	163
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.97%
B. Actual employer payroll	25,871
C. Payment to transition liability/(surplus)	251
4. Supplemental payment to transition liability	0
5. Interest	289
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$4,303

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	4,303	4,428
2. Combined valuation payroll	79,659	13,381
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	0.71%	3.98%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	79,659	13,381
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Glide Fire Department/2824
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Glide Fire Department/2824

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Glide Fire Department/2824

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Glide Fire Department -- #2824

December 2019

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Executive Summary

Milliman has prepared this report for Glide Fire Department to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Glide Fire Department.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Glide Fire Department

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	19.99%	14.58%	19.99%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(2.37%)	(2.37%)	(2.37%)	(2.37%)	(2.37%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	31.43%	26.02%	31.43%	21.89%	26.26%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	31.48%	26.07%	31.48%	21.89%	26.26%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Glide Fire Department

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$219,098	\$176,864
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(18,170)	(20,946)
Allocated pooled OPSRP UAL	18,238	13,971
Side account	0	0
Net unfunded pension actuarial accrued liability	219,166	169,889
Combined valuation payroll	101,006	92,712
Net pension UAL as a percentage of payroll	217%	183%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(2.37%)	(2.72%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$1,481)	(\$1,062)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	14,518	3,232
Tier 2 Police & Fire	20.00%	7,012	1,402	20.05%	0	0
Total Police & Fire		7,012	1,402		14,518	3,232
Total		\$7,012	\$1,402		\$14,518	\$3,232
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			19.99%			22.26%
Aggregate (Default)			19.99%			22.26%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$20,946)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(4.08%)
B. Actual employer payroll	46,252
C. Payment to transition liability/(surplus)	(1,887)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(4.08%)
B. Actual employer payroll	51,689
C. Payment to transition liability/(surplus)	(2,109)
4. Supplemental payment to transition liability	0
5. Interest	(1,220)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$18,170)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(18,170)	(20,946)
2. Combined valuation payroll	101,006	92,712
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(2.37%)	(2.72%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	101,006	92,712
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Northern Oregon Corrections/2825
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Northern Oregon Corrections/2825

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Northern Oregon Corrections/2825

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Northern Oregon Corrections -- #2825

December 2019

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Executive Summary

Milliman has prepared this report for Northern Oregon Corrections to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Northern Oregon Corrections.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Northern Oregon Corrections

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.99%	13.78%	20.56%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(9.45%)	(9.45%)	(9.45%)	(9.45%)	(9.45%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	20.35%	18.14%	24.92%	14.81%	19.18%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	20.40%	18.19%	24.97%	14.81%	19.18%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Northern Oregon Corrections

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$7,567,153	\$5,817,196
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(2,508,624)	(2,645,772)
Allocated pooled OPSRP UAL	629,905	459,513
Side account	0	0
Net unfunded pension actuarial accrued liability	5,688,434	3,630,937
Combined valuation payroll	3,488,543	3,049,370
Net pension UAL as a percentage of payroll	163%	119%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(9.45%)	(10.44%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$51,134)	(\$34,940)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$142,598	\$24,256	17.17%	\$175,189	\$30,080
Tier 2 General Service	12.84%	488,413	62,712	12.64%	409,784	51,797
Total General Service		631,011	86,968		584,973	81,877
Tier 1 Police & Fire	22.20%	78,075	17,333	22.26%	73,703	16,406
Tier 2 Police & Fire	20.00%	227,396	45,479	20.05%	223,195	44,751
Total Police & Fire		305,471	62,812		296,898	61,157
Total		\$936,482	\$149,780		\$881,871	\$143,034
Total normal cost rate						
General Service			13.78%			14.00%
Police & Fire			20.56%			20.60%
Aggregate (Default)			15.99%			16.22%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$2,645,772)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(9.31%)
B. Actual employer payroll	1,571,742
C. Payment to transition liability/(surplus)	(146,329)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(9.31%)
B. Actual employer payroll	1,711,157
C. Payment to transition liability/(surplus)	(159,309)
4. Supplemental payment to transition liability	0
5. Interest	(168,490)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$2,508,624)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(2,508,624)	(2,645,772)
2. Combined valuation payroll	3,488,543	3,049,370
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(9.45%)	(10.44%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	3,488,543	3,049,370
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Wasco County Soil-Water Conservation District/2826
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Wasco County Soil-Water Conservation District/2826

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Wasco County Soil-Water Conservation District/2826

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Wasco County Soil-Water Conservation District -- #2826

December 2019

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 Wasco County Soil-Water Conservation District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Wasco County Soil-Water Conservation District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Wasco County Soil-Water Conservation District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	12.84%	12.84%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(6.43%)	(6.43%)	(6.43%)	(6.43%)	(6.43%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	20.22%	20.22%	28.09%	17.83%	22.20%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	20.27%	20.27%	28.14%	17.83%	22.20%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Wasco County Soil-Water Conservation District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$839,671	\$646,397
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(189,271)	(200,304)
Allocated pooled OPSRP UAL	69,896	51,060
Side account	0	0
Net unfunded pension actuarial accrued liability	720,296	497,153
Combined valuation payroll	387,098	338,841
Net pension UAL as a percentage of payroll	186%	147%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(6.43%)	(7.11%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$5,674)	(\$3,883)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	238,722	30,652	12.64%	231,492	29,261
Total General Service		238,722	30,652		231,492	29,261
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$238,722	\$30,652		\$231,492	\$29,261
Total normal cost rate						
General Service			12.84%			12.64%
Police & Fire			20.71%			20.83%
Aggregate (Default)			12.84%			12.64%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$200,304)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(6.56%)
B. Actual employer payroll	171,527
C. Payment to transition liability/(surplus)	(11,252)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(6.56%)
B. Actual employer payroll	190,441
C. Payment to transition liability/(surplus)	(12,493)
4. Supplemental payment to transition liability	0
5. Interest	(12,712)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$189,271)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(189,271)	(200,304)
2. Combined valuation payroll	387,098	338,841
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(6.43%)	(7.11%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	387,098	338,841
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Hubbard Rural Fire Protection District/2829
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Hubbard Rural Fire Protection District/2829

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Hubbard Rural Fire Protection District/2829

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Hubbard Rural Fire Protection District -- #2829

December 2019

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 Hubbard Rural Fire Protection District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Hubbard Rural Fire Protection District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Hubbard Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(14.69%)	(14.69%)	(14.69%)	(14.69%)	(14.69%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	14.90%	13.70%	19.83%	9.57%	13.94%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	14.95%	13.75%	19.88%	9.57%	13.94%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Hubbard Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$108,062	\$0
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(55,672)	(63,021)
Allocated pooled OPSRP UAL	8,995	0
Side account	0	0
Net unfunded pension actuarial accrued liability	61,385	(63,021)
Combined valuation payroll	49,818	0
Net pension UAL as a percentage of payroll	123%	0%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(14.69%)	0.00%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$730)	\$0
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$63,021)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(28.68%)
B. Actual employer payroll	24,700
C. Payment to transition liability/(surplus)	(4,962)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(28.68%)
B. Actual employer payroll	30,493
C. Payment to transition liability/(surplus)	(6,126)
4. Supplemental payment to transition liability	0
5. Interest	(3,739)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$55,672)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(55,672)	(63,021)
2. Combined valuation payroll	49,818	0
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(14.69%)	0.00%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	49,818	0
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Netarts-Oceanside Rural Fire Protection District/2830
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Netarts-Oceanside Rural Fire Protection District/2830

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Netarts-Oceanside Rural Fire Protection District/2830

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Netarts-Oceanside Rural Fire Protection District -- #2830

December 2019

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Executive Summary

Milliman has prepared this report for Netarts-Oceanside Rural Fire Protection District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Netarts-Oceanside Rural Fire Protection District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Netarts-Oceanside Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	20.00%	14.58%	20.00%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(0.57%)	(0.57%)	(0.57%)	(0.57%)	(0.57%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	31.68%	26.26%	31.68%	22.13%	26.50%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	31.73%	26.31%	31.73%	22.13%	26.50%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Netarts-Oceanside Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$253,106	\$253,317
Allocated pre-SLGRP pooled liability/(surplus)	(13,859)	(18,541)
Transition liability/(surplus)	(5,069)	(5,466)
Allocated pooled OPSRP UAL	21,069	20,010
Side account	0	0
Net unfunded pension actuarial accrued liability	255,247	249,320
Combined valuation payroll	116,685	132,788
Net pension UAL as a percentage of payroll	219%	188%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(0.57%)	(0.50%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$1,710)	(\$1,522)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	74,710	14,942	20.05%	71,847	14,405
Total Police & Fire		74,710	14,942		71,847	14,405
Total		\$74,710	\$14,942		\$71,847	\$14,405
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.00%			20.05%
Aggregate (Default)			20.00%			20.05%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$5,466)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(0.57%)
B. Actual employer payroll	55,160
C. Payment to transition liability/(surplus)	(314)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(0.57%)
B. Actual employer payroll	74,211
C. Payment to transition liability/(surplus)	(423)
4. Supplemental payment to transition liability	0
5. Interest	(340)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$5,069)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(5,069)	(5,466)
2. Combined valuation payroll	116,685	132,788
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.57%)	(0.50%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	116,685	132,788
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Crescent Rural Fire Protection District/2834
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Crescent Rural Fire Protection District/2834

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Crescent Rural Fire Protection District/2834

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Crescent Rural Fire Protection District -- #2834

December 2019

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 Crescent Rural Fire Protection District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Crescent Rural Fire Protection District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Crescent Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(1.23%)	(1.23%)	(1.23%)	(1.23%)	(1.23%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	28.36%	27.16%	33.29%	23.03%	27.40%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	28.41%	27.21%	33.34%	23.03%	27.40%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Crescent Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$569,053	\$238,520
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(24,466)	(29,499)
Allocated pooled OPSRP UAL	47,369	18,841
Side account	0	0
Net unfunded pension actuarial accrued liability	591,956	227,862
Combined valuation payroll	262,340	125,032
Net pension UAL as a percentage of payroll	226%	182%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(1.23%)	(2.84%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$3,845)	(\$1,433)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$29,499)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(2.71%)
B. Actual employer payroll	99,855
C. Payment to transition liability/(surplus)	(2,706)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(2.71%)
B. Actual employer payroll	146,483
C. Payment to transition liability/(surplus)	(3,970)
4. Supplemental payment to transition liability	0
5. Interest	(1,643)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$24,466)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(24,466)	(29,499)
2. Combined valuation payroll	262,340	125,032
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(1.23%)	(2.84%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	262,340	125,032
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

METCOM/2837

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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
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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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



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This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

METCOM -- #2837

December 2019

Secondary Employers

2775 Silver Falls 9-1-1

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Executive Summary

Milliman has prepared this report for METCOM to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to METCOM.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for METCOM

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.48%	14.48%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(4.52%)	(4.52%)	(4.52%)	(4.52%)	(4.52%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	23.77%	23.77%	30.00%	19.74%	24.11%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	23.82%	23.82%	30.05%	19.74%	24.11%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

METCOM

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$3,130,733	\$2,626,286
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(496,715)	(532,663)
Allocated pooled OPSRP UAL	260,609	207,456
Side account	0	0
Net unfunded pension actuarial accrued liability	2,894,627	2,301,079
Combined valuation payroll	1,443,303	1,376,697
Net pension UAL as a percentage of payroll	201%	167%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(4.52%)	(4.65%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$21,156)	(\$15,774)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$166,709	\$28,357	17.17%	\$165,899	\$28,485
Tier 2 General Service	12.84%	257,353	33,044	12.64%	262,579	33,190
Total General Service		424,062	61,401		428,478	61,675
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$424,062	\$61,401		\$428,478	\$61,675
Total normal cost rate						
General Service			14.48%			14.39%
Police & Fire			20.71%			20.83%
Aggregate (Default)			14.48%			14.39%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$532,663)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(5.05%)
B. Actual employer payroll	670,412
C. Payment to transition liability/(surplus)	(33,856)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(5.05%)
B. Actual employer payroll	702,037
C. Payment to transition liability/(surplus)	(35,453)
4. Supplemental payment to transition liability	0
5. Interest	(33,361)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$496,715)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(496,715)	(532,663)
2. Combined valuation payroll	1,443,303	1,376,697
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(4.52%)	(4.65%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	1,443,303	1,376,697
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

High Desert Parks & Recreation District/2838
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
High Desert Parks & Recreation District/2838

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
High Desert Parks & Recreation District/2838

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

High Desert Parks & Recreation District -- #2838

December 2019

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Executive Summary

Milliman has prepared this report for High Desert Parks & Recreation District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to High Desert Parks & Recreation District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for High Desert Parks & Recreation District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	0.38%	0.38%	0.38%	0.38%	0.38%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	28.41%	27.21%	33.34%	23.08%	27.45%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	28.46%	27.26%	33.39%	23.08%	27.45%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

High Desert Parks & Recreation District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$64,551	\$55,080
Allocated pre-SLGRP pooled liability/(surplus)	(3,535)	(4,031)
Transition liability/(surplus)	852	914
Allocated pooled OPSRP UAL	5,373	4,351
Side account	0	0
Net unfunded pension actuarial accrued liability	67,241	56,314
Combined valuation payroll	29,759	28,873
Net pension UAL as a percentage of payroll	226%	195%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	0.38%	0.38%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$436)	(\$331)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$914
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.42%
B. Actual employer payroll	13,924
C. Payment to transition liability/(surplus)	58
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.42%
B. Actual employer payroll	14,342
C. Payment to transition liability/(surplus)	61
4. Supplemental payment to transition liability	0
5. Interest	57
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	\$852

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	852	914
2. Combined valuation payroll	29,759	28,873
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	0.38%	0.38%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	29,759	28,873
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

North Morrow Vector Control District/2839
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
North Morrow Vector Control District/2839

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
North Morrow Vector Control District/2839

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

North Morrow Vector Control District -- #2839

December 2019

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Executive Summary

Milliman has prepared this report for North Morrow Vector Control District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to North Morrow Vector Control District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for North Morrow Vector Control District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	12.84%	12.84%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	0.11%	0.11%	0.11%	0.11%	0.11%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	25.20%	25.20%	33.07%	22.81%	27.18%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	25.25%	25.25%	33.12%	22.81%	27.18%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

North Morrow Vector Control District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$304,613	\$253,428
Allocated pre-SLGRP pooled liability/(surplus)	(16,679)	(18,549)
Transition liability/(surplus)	1,211	1,306
Allocated pooled OPSRP UAL	25,357	20,019
Side account	0	0
Net unfunded pension actuarial accrued liability	314,502	256,204
Combined valuation payroll	140,430	132,847
Net pension UAL as a percentage of payroll	224%	193%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	0.11%	0.12%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$2,058)	(\$1,522)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	140,430	18,031	12.64%	132,847	16,792
Total General Service		140,430	18,031		132,847	16,792
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$140,430	\$18,031		\$132,847	\$16,792
Total normal cost rate						
General Service			12.84%			12.64%
Police & Fire			20.71%			20.83%
Aggregate (Default)			12.84%			12.64%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$1,306
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.13%
B. Actual employer payroll	65,376
C. Payment to transition liability/(surplus)	85
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.13%
B. Actual employer payroll	70,300
C. Payment to transition liability/(surplus)	91
4. Supplemental payment to transition liability	0
5. Interest	81
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$1,211

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	1,211	1,306
2. Combined valuation payroll	140,430	132,847
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	0.11%	0.12%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	140,430	132,847
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Cannon Beach Rural Fire Protection District/2840
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Cannon Beach Rural Fire Protection District/2840

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Cannon Beach Rural Fire Protection District/2840

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Cannon Beach Rural Fire Protection District -- #2840

December 2019

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Executive Summary

Milliman has prepared this report for Cannon Beach Rural Fire Protection District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Cannon Beach Rural Fire Protection District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Cannon Beach Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	21.77%	14.58%	21.77%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(0.04%)	(0.04%)	(0.04%)	(0.04%)	(0.04%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	33.98%	26.79%	33.98%	22.66%	27.03%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	34.03%	26.84%	34.03%	22.66%	27.03%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Cannon Beach Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$350,252	\$246,092
Allocated pre-SLGRP pooled liability/(surplus)	(19,178)	(18,012)
Transition liability/(surplus)	(493)	(538)
Allocated pooled OPSRP UAL	29,156	19,439
Side account	0	0
Net unfunded pension actuarial accrued liability	359,737	246,981
Combined valuation payroll	161,470	129,001
Net pension UAL as a percentage of payroll	223%	191%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(0.04%)	(0.05%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$2,367)	(\$1,478)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	130,243	28,914	22.26%	97,759	21,761
Tier 2 Police & Fire	20.00%	31,227	6,245	20.05%	31,242	6,264
Total Police & Fire		161,470	35,159		129,001	28,025
Total		\$161,470	\$35,159		\$129,001	\$28,025
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			21.77%			21.72%
Aggregate (Default)			21.77%			21.72%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$538)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(0.05%)
B. Actual employer payroll	74,314
C. Payment to transition liability/(surplus)	(37)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(0.05%)
B. Actual employer payroll	80,944
C. Payment to transition liability/(surplus)	(41)
4. Supplemental payment to transition liability	0
5. Interest	(33)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$493)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(493)	(538)
2. Combined valuation payroll	161,470	129,001
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.04%)	(0.05%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	161,470	129,001
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Tualatin Valley Water District/2842
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Tualatin Valley Water District/2842

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Tualatin Valley Water District/2842

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Tualatin Valley Water District -- #2842

December 2019

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Executive Summary

Milliman has prepared this report for Tualatin Valley Water District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Tualatin Valley Water District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Tualatin Valley Water District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.37%	14.37%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(2.99%)	(2.99%)	(2.99%)	(2.99%)	(2.99%)
Side account rate relief ²	(1.22%)	(1.22%)	(1.22%)	(1.22%)	(1.22%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	23.97%	23.97%	30.31%	20.05%	24.42%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	24.02%	24.02%	30.36%	20.05%	24.42%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Tualatin Valley Water District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$24,143,126	\$19,550,184
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(2,532,114)	(2,717,575)
Allocated pooled OPSRP UAL	2,009,722	1,544,312
Side account	1,032,485	1,165,150
Net unfunded pension actuarial accrued liability	22,588,249	17,211,771
Combined valuation payroll	11,130,254	10,248,193
Net pension UAL as a percentage of payroll	203%	168%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(2.99%)	(3.19%)
Side account rate relief	(1.22%)	(1.37%)
Allocated pooled RHIA UAL	(\$163,145)	(\$117,426)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$1,920,961	\$326,755	17.17%	\$2,056,599	\$353,118
Tier 2 General Service	12.84%	3,305,157	424,382	12.64%	3,029,521	382,931
Total General Service		5,226,118	751,137		5,086,120	736,049
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$5,226,118	\$751,137		\$5,086,120	\$736,049

Total normal cost rate

General Service	14.37%	14.47%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.37%	14.47%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$2,717,575)
2. January 1, 2018 through June 30, 2018 ¹	
A. Transition liability/(surplus) rate	(3.26%)
B. Actual employer payroll	5,236,026
C. Payment to transition liability/(surplus)	(170,694)
3. July 1, 2018 through December 31, 2018 ¹	
A. Transition liability/(surplus) rate	(3.26%)
B. Actual employer payroll	5,669,767
C. Payment to transition liability/(surplus)	(184,834)
4. Supplemental payment to transition liability	0
5. Interest	(170,067)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	(\$2,532,114)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(2,532,114)	(2,717,575)
2. Combined valuation payroll	11,130,254	10,248,193
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(2.99%)	(3.19%)

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, 2017	N/A	\$1,165,150	\$1,165,150
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(139,375)	(139,375)
5. Side account earnings during 2018		7,210	7,210
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$1,032,485	\$1,032,485

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$1,032,485	\$1,165,150
Side Account 2	0	0
Side Account 3	0	0
Total	\$1,032,485	\$1,165,150

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$1,032,485	\$1,165,150
2. Combined valuation payroll	11,130,254	10,248,193
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(1.22%)	(1.37%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Yachats Rural Fire Protection District/2843
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Yachats Rural Fire Protection District/2843

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Yachats Rural Fire Protection District/2843

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Yachats Rural Fire Protection District -- #2843

December 2019

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 Yachats Rural Fire Protection District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Yachats Rural Fire Protection District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Yachats Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	20.00%	14.58%	20.00%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(1.17%)	(1.17%)	(1.17%)	(1.17%)	(1.17%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	32.64%	27.22%	32.64%	23.09%	27.46%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	32.69%	27.27%	32.69%	23.09%	27.46%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Yachats Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$782,330	\$712,927
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(32,231)	(34,586)
Allocated pooled OPSRP UAL	65,123	56,316
Side account	0	0
Net unfunded pension actuarial accrued liability	815,222	734,657
Combined valuation payroll	360,663	373,716
Net pension UAL as a percentage of payroll	226%	197%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(1.17%)	(1.11%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$5,287)	(\$4,282)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	75,773	15,155	20.05%	122,917	24,645
Total Police & Fire		75,773	15,155		122,917	24,645
Total		\$75,773	\$15,155		\$122,917	\$24,645
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.00%			20.05%
Aggregate (Default)			20.00%			20.05%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$34,586)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(1.11%)
B. Actual employer payroll	184,073
C. Payment to transition liability/(surplus)	(2,043)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(1.11%)
B. Actual employer payroll	223,135
C. Payment to transition liability/(surplus)	(2,477)
4. Supplemental payment to transition liability	0
5. Interest	(2,165)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$32,231)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(32,231)	(34,586)
2. Combined valuation payroll	360,663	373,716
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(1.17%)	(1.11%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	360,663	373,716
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Crook County Rural Fire Protection District #1/2844
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.



December 2019
Crook County Rural Fire Protection District #1/2844

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Crook County Rural Fire Protection District #1/2844

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Crook County Rural Fire Protection District #1 -- #2844

December 2019

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 Crook County Rural Fire Protection District #1 to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Crook County Rural Fire Protection District #1.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Crook County Rural Fire Protection District #1

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	18.47%	12.84%	20.00%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(0.17%)	(0.17%)	(0.17%)	(0.17%)	(0.17%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	30.55%	24.92%	32.08%	22.53%	26.90%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	30.60%	24.97%	32.13%	22.53%	26.90%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Crook County Rural Fire Protection District #1

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$4,674,490	\$3,747,274
Allocated pre-SLGRP pooled liability/(surplus)	(255,952)	(274,269)
Transition liability/(surplus)	(27,712)	(30,446)
Allocated pooled OPSRP UAL	389,114	296,005
Side account	0	0
Net unfunded pension actuarial accrued liability	4,779,940	3,738,564
Combined valuation payroll	2,154,993	1,964,318
Net pension UAL as a percentage of payroll	222%	190%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(0.17%)	(0.19%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$31,587)	(\$22,508)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	89,012	11,429	12.64%	82,743	10,459
Total General Service		89,012	11,429		82,743	10,459
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	328,021	65,604	20.05%	337,501	67,669
Total Police & Fire		328,021	65,604		337,501	67,669
Total		\$417,033	\$77,033		\$420,244	\$78,128
Total normal cost rate						
General Service			12.84%			12.64%
Police & Fire			20.00%			20.05%
Aggregate (Default)			18.47%			18.59%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$30,446)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(0.23%)
B. Actual employer payroll	932,159
C. Payment to transition liability/(surplus)	(2,144)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(0.23%)
B. Actual employer payroll	1,065,916
C. Payment to transition liability/(surplus)	(2,451)
4. Supplemental payment to transition liability	0
5. Interest	(1,861)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$27,712)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(27,712)	(30,446)
2. Combined valuation payroll	2,154,993	1,964,318
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.17%)	(0.19%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	2,154,993	1,964,318
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Jefferson County Library District/2846
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Jefferson County Library District/2846

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Jefferson County Library District/2846

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Jefferson County Library District -- #2846

December 2019

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 Jefferson County Library District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Jefferson County Library District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Jefferson County Library District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	12.84%	12.84%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(0.80%)	(0.80%)	(0.80%)	(0.80%)	(0.80%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	25.85%	25.85%	33.72%	23.46%	27.83%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	25.90%	25.90%	33.77%	23.46%	27.83%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Jefferson County Library District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$383,969	\$427,501
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(10,738)	(11,421)
Allocated pooled OPSRP UAL	31,962	33,769
Side account	0	0
Net unfunded pension actuarial accrued liability	405,193	449,849
Combined valuation payroll	177,014	224,096
Net pension UAL as a percentage of payroll	229%	201%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(0.80%)	(0.61%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$2,595)	(\$2,568)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$10,450	\$1,794
Tier 2 General Service	12.84%	91,478	11,746	12.64%	88,295	11,160
Total General Service		91,478	11,746		98,745	12,954
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$91,478	\$11,746		\$98,745	\$12,954
Total normal cost rate						
General Service			12.84%			13.12%
Police & Fire			20.71%			20.83%
Aggregate (Default)			12.84%			13.12%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$11,421)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(0.69%)
B. Actual employer payroll	103,394
C. Payment to transition liability/(surplus)	(713)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(0.69%)
B. Actual employer payroll	100,148
C. Payment to transition liability/(surplus)	(691)
4. Supplemental payment to transition liability	0
5. Interest	(721)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$10,738)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(10,738)	(11,421)
2. Combined valuation payroll	177,014	224,096
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.80%)	(0.61%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	177,014	224,096
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Sweet Home Fire and Ambulance District/2847
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Sweet Home Fire and Ambulance District/2847

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Sweet Home Fire and Ambulance District/2847

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Sweet Home Fire and Ambulance District -- #2847

December 2019

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 Sweet Home Fire and Ambulance District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Sweet Home Fire and Ambulance District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Sweet Home Fire and Ambulance District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	21.11%	14.58%	21.11%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(0.72%)	(0.72%)	(0.72%)	(0.72%)	(0.72%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	32.64%	26.11%	32.64%	21.98%	26.35%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	32.69%	26.16%	32.69%	21.98%	26.35%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Sweet Home Fire and Ambulance District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$2,738,779	\$2,285,646
Allocated pre-SLGRP pooled liability/(surplus)	(149,962)	(167,290)
Transition liability/(surplus)	(68,806)	(74,404)
Allocated pooled OPSRP UAL	227,981	180,548
Side account	0	0
Net unfunded pension actuarial accrued liability	2,747,992	2,224,500
Combined valuation payroll	1,262,608	1,198,134
Net pension UAL as a percentage of payroll	218%	186%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(0.72%)	(0.75%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$18,507)	(\$13,728)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	198,556	44,079	22.26%	187,599	41,760
Tier 2 Police & Fire	20.00%	193,610	38,722	20.05%	211,075	42,321
Total Police & Fire		392,166	82,801		398,674	84,081
Total		\$392,166	\$82,801		\$398,674	\$84,081
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			21.11%			21.09%
Aggregate (Default)			21.11%			21.09%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$74,404)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(0.89%)
B. Actual employer payroll	525,911
C. Payment to transition liability/(surplus)	(4,681)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(0.89%)
B. Actual employer payroll	622,258
C. Payment to transition liability/(surplus)	(5,538)
4. Supplemental payment to transition liability	0
5. Interest	(4,621)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$68,806)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(68,806)	(74,404)
2. Combined valuation payroll	1,262,608	1,198,134
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(0.72%)	(0.75%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	1,262,608	1,198,134
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Lebanon Aquatic District/2849
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Lebanon Aquatic District/2849

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Lebanon Aquatic District/2849

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Lebanon Aquatic District -- #2849

December 2019

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Executive Summary

Milliman has prepared this report for Lebanon Aquatic District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Lebanon Aquatic District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Lebanon Aquatic District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	16.64%	16.64%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(1.27%)	(1.27%)	(1.27%)	(1.27%)	(1.27%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	29.18%	29.18%	33.25%	22.99%	27.36%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	29.23%	29.23%	33.30%	22.99%	27.36%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Lebanon Aquatic District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$477,061	\$449,725
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(21,271)	(23,373)
Allocated pooled OPSRP UAL	39,711	35,525
Side account	0	0
Net unfunded pension actuarial accrued liability	495,501	461,877
Combined valuation payroll	219,930	235,745
Net pension UAL as a percentage of payroll	225%	196%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(1.27%)	(1.19%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$3,224)	(\$2,701)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$7,116	\$1,210	17.17%	\$1,312	\$225
Tier 2 General Service	12.84%	672	86	12.64%	744	94
Total General Service		7,788	1,296		2,056	319
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$7,788	\$1,296		\$2,056	\$319
Total normal cost rate						
General Service			16.64%			15.52%
Police & Fire			20.71%			20.83%
Aggregate (Default)			16.64%			15.52%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$23,373)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(1.59%)
B. Actual employer payroll	114,629
C. Payment to transition liability/(surplus)	(1,823)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(1.59%)
B. Actual employer payroll	107,410
C. Payment to transition liability/(surplus)	(1,708)
4. Supplemental payment to transition liability	0
5. Interest	(1,429)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$21,271)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(21,271)	(23,373)
2. Combined valuation payroll	219,930	235,745
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(1.27%)	(1.19%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	219,930	235,745
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

East Umatilla County Rural Fire Protection District/2851
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
East Umatilla County Rural Fire Protection District/2851

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
East Umatilla County Rural Fire Protection District/2851

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

East Umatilla County Rural Fire Protection District -- #2851

December 2019

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Executive Summary

Milliman has prepared this report for East Umatilla County Rural Fire Protection District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to East Umatilla County Rural Fire Protection District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for East Umatilla County Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	22.01%	14.58%	22.01%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(29.08%)	(29.08%)	(29.08%)	(29.08%)	(29.08%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	5.18%	0.00%	5.18%	0.00%	0.00%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	5.23%	0.05%	5.23%	0.00%	0.00%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

East Umatilla County Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$22,182	\$2,224
Allocated pre-SLGRP pooled liability/(surplus)	(1,215)	(163)
Transition liability/(surplus)	(22,621)	(22,457)
Allocated pooled OPSRP UAL	1,846	176
Side account	0	0
Net unfunded pension actuarial accrued liability	192	(20,220)
Combined valuation payroll	10,226	1,166
Net pension UAL as a percentage of payroll	2%	(1,734%)
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(29.08%)	(231.71%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$150)	(\$13)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	9,359	2,078	22.26%	499	111
Tier 2 Police & Fire	20.00%	867	173	20.05%	0	0
Total Police & Fire		10,226	2,251		499	111
Total		\$10,226	\$2,251		\$499	\$111
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			22.01%			22.24%
Aggregate (Default)			22.01%			22.24%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$22,457)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(3.84%)
B. Actual employer payroll	15,969
C. Payment to transition liability/(surplus)	(613)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(3.84%)
B. Actual employer payroll	19,320
C. Payment to transition liability/(surplus)	(742)
4. Supplemental payment to transition liability	0
5. Interest	(1,519)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$22,621)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(22,621)	(22,457)
2. Combined valuation payroll	10,226	1,166
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(29.08%)	(231.71%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	10,226	1,166
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Ochoco Irrigation District/2852
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Ochoco Irrigation District/2852

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Ochoco Irrigation District/2852

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Ochoco Irrigation District -- #2852

December 2019

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 Ochoco Irrigation District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Ochoco Irrigation District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Ochoco Irrigation District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	13.31%	13.31%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(5.08%)	(5.08%)	(5.08%)	(5.08%)	(5.08%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	20.48%	20.48%	27.88%	17.62%	21.99%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	20.53%	20.53%	27.93%	17.62%	21.99%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Ochoco Irrigation District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$1,159,963	\$922,599
Allocated pre-SLGRP pooled liability/(surplus)	(63,514)	(67,526)
Transition liability/(surplus)	(206,791)	(217,770)
Allocated pooled OPSRP UAL	96,558	72,878
Side account	0	0
Net unfunded pension actuarial accrued liability	986,216	710,181
Combined valuation payroll	534,756	483,626
Net pension UAL as a percentage of payroll	184%	147%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(5.08%)	(5.42%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$7,838)	(\$5,541)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$20,622	\$3,508	17.17%	\$0	\$0
Tier 2 General Service	12.84%	161,100	20,685	12.64%	215,972	27,299
Total General Service		181,722	24,193		215,972	27,299
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$181,722	\$24,193		\$215,972	\$27,299
Total normal cost rate						
General Service			13.31%			12.64%
Police & Fire			20.71%			20.83%
Aggregate (Default)			13.31%			12.64%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$217,770)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(5.10%)
B. Actual employer payroll	237,976
C. Payment to transition liability/(surplus)	(12,137)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(5.10%)
B. Actual employer payroll	249,638
C. Payment to transition liability/(surplus)	(12,731)
4. Supplemental payment to transition liability	0
5. Interest	(13,889)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$206,791)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(206,791)	(217,770)
2. Combined valuation payroll	534,756	483,626
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(5.08%)	(5.42%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	534,756	483,626
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Mill City Rural Fire Protection District/2853
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Mill City Rural Fire Protection District/2853

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Mill City Rural Fire Protection District/2853

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Mill City Rural Fire Protection District -- #2853

December 2019

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 Mill City Rural Fire Protection District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Mill City Rural Fire Protection District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Mill City Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	20.00%	14.58%	20.00%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(11.48%)	(11.48%)	(11.48%)	(11.48%)	(11.48%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	22.33%	16.91%	22.33%	12.78%	17.15%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	22.38%	16.96%	22.38%	12.78%	17.15%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Mill City Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$119,305	\$103,474
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(48,010)	(50,394)
Allocated pooled OPSRP UAL	9,931	8,174
Side account	0	0
Net unfunded pension actuarial accrued liability	81,226	61,254
Combined valuation payroll	55,001	54,241
Net pension UAL as a percentage of payroll	148%	113%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(11.48%)	(11.18%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$806)	(\$622)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	55,001	11,000	20.05%	54,241	10,875
Total Police & Fire		55,001	11,000		54,241	10,875
Total		\$55,001	\$11,000		\$54,241	\$10,875
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.00%			20.05%
Aggregate (Default)			20.00%			20.05%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$50,394)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(10.62%)
B. Actual employer payroll	24,190
C. Payment to transition liability/(surplus)	(2,569)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(10.62%)
B. Actual employer payroll	28,625
C. Payment to transition liability/(surplus)	(3,040)
4. Supplemental payment to transition liability	0
5. Interest	(3,225)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$48,010)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(48,010)	(50,394)
2. Combined valuation payroll	55,001	54,241
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(11.48%)	(11.18%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	55,001	54,241
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Harney Hospital/2855
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Harney Hospital/2855

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Harney Hospital/2855

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Harney Hospital -- #2855

December 2019

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Executive Summary

Milliman has prepared this report for Harney Hospital to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Harney Hospital.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Harney Hospital

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	13.44%	13.44%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(3.28%)	(3.28%)	(3.28%)	(3.28%)	(3.28%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	23.97%	23.97%	31.24%	20.98%	25.35%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	24.02%	24.02%	31.29%	20.98%	25.35%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Harney Hospital

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$23,184,095	\$19,018,244
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(2,668,051)	(2,884,031)
Allocated pooled OPSRP UAL	1,929,891	1,502,292
Side account	0	0
Net unfunded pension actuarial accrued liability	22,445,935	17,636,505
Combined valuation payroll	10,688,130	9,969,350
Net pension UAL as a percentage of payroll	210%	177%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(3.28%)	(3.48%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$156,664)	(\$114,231)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$198,424	\$33,752	17.17%	\$244,203	\$41,930
Tier 2 General Service	12.84%	1,179,747	151,480	12.64%	1,211,775	153,168
Total General Service		1,378,171	185,232		1,455,978	195,098
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$1,378,171	\$185,232		\$1,455,978	\$195,098

Total normal cost rate

General Service	13.44%	13.40%
Police & Fire	20.71%	20.83%
Aggregate (Default)	13.44%	13.40%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$2,884,031)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(3.87%)
B. Actual employer payroll	5,041,974
C. Payment to transition liability/(surplus)	(195,124)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(3.87%)
B. Actual employer payroll	5,169,317
C. Payment to transition liability/(surplus)	(200,053)
4. Supplemental payment to transition liability	0
5. Interest	(179,197)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$2,668,051)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(2,668,051)	(2,884,031)
2. Combined valuation payroll	10,688,130	9,969,350
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(3.28%)	(3.48%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	10,688,130	9,969,350
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Sunriver Service District/2857
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Sunriver Service District/2857

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Sunriver Service District/2857

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Sunriver Service District -- #2857

December 2019

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Executive Summary

Milliman has prepared this report for Sunriver Service District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Sunriver Service District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Sunriver Service District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	20.00%	14.58%	20.00%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(8.77%)	(8.77%)	(8.77%)	(8.77%)	(8.77%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	25.04%	19.62%	25.04%	15.49%	19.86%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	25.09%	19.67%	25.09%	15.49%	19.86%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Sunriver Service District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$4,372,859	\$3,578,220
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(1,345,376)	(1,420,206)
Allocated pooled OPSRP UAL	364,006	282,651
Side account	0	0
Net unfunded pension actuarial accrued liability	3,391,489	2,440,665
Combined valuation payroll	2,015,938	1,875,701
Net pension UAL as a percentage of payroll	168%	130%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(8.77%)	(9.11%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$29,549)	(\$21,492)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	958,518	191,704	20.05%	915,116	183,481
Total Police & Fire		958,518	191,704		915,116	183,481
Total		\$958,518	\$191,704		\$915,116	\$183,481
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.00%			20.05%
Aggregate (Default)			20.00%			20.05%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$1,420,206)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(8.77%)
B. Actual employer payroll	889,790
C. Payment to transition liability/(surplus)	(78,035)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(8.77%)
B. Actual employer payroll	993,790
C. Payment to transition liability/(surplus)	(87,156)
4. Supplemental payment to transition liability	0
5. Interest	(90,361)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$1,345,376)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(1,345,376)	(1,420,206)
2. Combined valuation payroll	2,015,938	1,875,701
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(8.77%)	(9.11%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	2,015,938	1,875,701
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Nesika Beach-Ophir Water District/2858
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Nesika Beach-Ophir Water District/2858

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Nesika Beach-Ophir Water District/2858

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Nesika Beach-Ophir Water District -- #2858

December 2019

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 Nesika Beach-Ophir Water District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Nesika Beach-Ophir Water District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Nesika Beach-Ophir Water District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	12.84%	12.84%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(3.67%)	(3.67%)	(3.67%)	(3.67%)	(3.67%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	22.98%	22.98%	30.85%	20.59%	24.96%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	23.03%	23.03%	30.90%	20.59%	24.96%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Nesika Beach-Ophir Water District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$208,592	\$170,065
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(26,814)	(28,050)
Allocated pooled OPSRP UAL	17,364	13,434
Side account	0	0
Net unfunded pension actuarial accrued liability	199,142	155,449
Combined valuation payroll	96,163	89,148
Net pension UAL as a percentage of payroll	207%	174%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(3.67%)	(3.79%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$1,410)	(\$1,021)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	15,912	2,043	12.64%	15,500	1,959
Total General Service		15,912	2,043		15,500	1,959
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$15,912	\$2,043		\$15,500	\$1,959
Total normal cost rate						
General Service			12.84%			12.64%
Police & Fire			20.71%			20.83%
Aggregate (Default)			12.84%			12.64%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$28,050)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(3.34%)
B. Actual employer payroll	44,896
C. Payment to transition liability/(surplus)	(1,500)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(3.34%)
B. Actual employer payroll	46,014
C. Payment to transition liability/(surplus)	(1,537)
4. Supplemental payment to transition liability	0
5. Interest	(1,801)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$26,814)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(26,814)	(28,050)
2. Combined valuation payroll	96,163	89,148
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(3.67%)	(3.79%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	96,163	89,148
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Coos County Airport District/2860
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Coos County Airport District/2860

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Coos County Airport District/2860

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Coos County Airport District -- #2860

December 2019

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Executive Summary

Milliman has prepared this report for Coos County Airport District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Coos County Airport District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Coos County Airport District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	12.84%	12.84%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(6.55%)	(6.55%)	(6.55%)	(6.55%)	(6.55%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	20.10%	20.10%	27.97%	17.71%	22.08%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	20.15%	20.15%	28.02%	17.71%	22.08%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Coos County Airport District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$1,397,448	\$1,380,821
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(320,953)	(336,962)
Allocated pooled OPSRP UAL	116,326	109,074
Side account	0	0
Net unfunded pension actuarial accrued liability	1,192,821	1,152,933
Combined valuation payroll	644,239	723,825
Net pension UAL as a percentage of payroll	185%	159%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(6.55%)	(5.60%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$9,443)	(\$8,294)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	162,012	20,802	12.64%	150,526	19,026
Total General Service		162,012	20,802		150,526	19,026
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$162,012	\$20,802		\$150,526	\$19,026
Total normal cost rate						
General Service			12.84%			12.64%
Police & Fire			20.71%			20.83%
Aggregate (Default)			12.84%			12.64%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$336,962)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(5.51%)
B. Actual employer payroll	355,108
C. Payment to transition liability/(surplus)	(19,566)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(5.51%)
B. Actual employer payroll	326,659
C. Payment to transition liability/(surplus)	(18,000)
4. Supplemental payment to transition liability	0
5. Interest	(21,557)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$320,953)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(320,953)	(336,962)
2. Combined valuation payroll	644,239	723,825
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(6.55%)	(5.60%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	644,239	723,825
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Tri-City Water and Sanitary Authority/2864
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Tri-City Water and Sanitary Authority/2864

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Tri-City Water and Sanitary Authority/2864

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Tri-City Water and Sanitary Authority -- #2864

December 2019

Secondary Employers

2690 Tri City Sanitary

2691 Tri City Water

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Executive Summary

Milliman has prepared this report for Tri-City Water and Sanitary Authority to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Tri-City Water and Sanitary Authority.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Tri-City Water and Sanitary Authority

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	12.84%	12.84%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	(1.56%)	(1.56%)	(1.56%)	(1.56%)	(1.56%)
Transition liability/(surplus) rate ²	(2.10%)	(2.10%)	(2.10%)	(2.10%)	(2.10%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	22.99%	22.99%	30.86%	20.60%	24.97%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	23.04%	23.04%	30.91%	20.60%	24.97%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Tri-City Water and Sanitary Authority

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$873,295	\$791,459
Allocated pre-SLGRP pooled liability/(surplus)	(47,817)	(57,928)
Transition liability/(surplus)	(64,181)	(67,750)
Allocated pooled OPSRP UAL	72,695	62,519
Side account	0	0
Net unfunded pension actuarial accrued liability	833,992	728,300
Combined valuation payroll	402,599	414,882
Net pension UAL as a percentage of payroll	207%	176%
Pre-SLGRP pooled rate	(1.56%)	(1.68%)
Transition rate	(2.10%)	(1.96%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$5,901)	(\$4,754)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	73,965	9,497	12.64%	71,830	9,079
Total General Service		73,965	9,497		71,830	9,079
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$73,965	\$9,497		\$71,830	\$9,079
Total normal cost rate						
General Service			12.84%			12.64%
Police & Fire			20.71%			20.83%
Aggregate (Default)			12.84%			12.64%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$67,750)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(2.00%)
B. Actual employer payroll	196,493
C. Payment to transition liability/(surplus)	(3,930)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(2.00%)
B. Actual employer payroll	197,487
C. Payment to transition liability/(surplus)	(3,950)
4. Supplemental payment to transition liability	0
5. Interest	(4,311)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$64,181)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(64,181)	(67,750)
2. Combined valuation payroll	402,599	414,882
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(2.10%)	(1.96%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	402,599	414,882
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

West Multnomah Soil And Water Conservation District/2867
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
West Multnomah Soil And Water Conservation District/2867

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
West Multnomah Soil And Water Conservation District/2867

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

West Multnomah Soil And Water Conservation District -- #2867

December 2019

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Executive Summary

Milliman has prepared this report for West Multnomah Soil And Water Conservation District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to West Multnomah Soil And Water Conservation District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for West Multnomah Soil And Water Conservation District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	12.84%	12.84%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	26.65%	26.65%	34.52%	24.26%	28.63%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	26.70%	26.70%	34.57%	24.26%	28.63%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

West Multnomah Soil And Water Conservation District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$1,583,355	\$1,331,598
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	131,802	105,186
Side account	0	0
Net unfunded pension actuarial accrued liability	1,715,157	1,436,784
Combined valuation payroll	729,945	698,023
Net pension UAL as a percentage of payroll	235%	206%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	0.00%	0.00%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$10,699)	(\$7,998)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	187,527	24,078	12.64%	176,354	22,291
Total General Service		187,527	24,078		176,354	22,291
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$187,527	\$24,078		\$176,354	\$22,291
Total normal cost rate						
General Service			12.84%			12.64%
Police & Fire			20.71%			20.83%
Aggregate (Default)			12.84%			12.64%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	729,945	698,023
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	729,945	698,023
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Nehalem Bay Fire & Rescue/2869
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Nehalem Bay Fire & Rescue/2869

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Nehalem Bay Fire & Rescue/2869

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Nehalem Bay Fire & Rescue -- #2869

December 2019

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Executive Summary

Milliman has prepared this report for Nehalem Bay Fire & Rescue to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Nehalem Bay Fire & Rescue.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Nehalem Bay Fire & Rescue

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	22.20%	14.58%	22.20%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	36.01%	28.39%	36.01%	24.26%	28.63%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	36.06%	28.44%	36.06%	24.26%	28.63%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Nehalem Bay Fire & Rescue

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$568,029	\$513,138
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	47,284	40,534
Side account	0	0
Net unfunded pension actuarial accrued liability	615,313	553,672
Combined valuation payroll	261,868	268,987
Net pension UAL as a percentage of payroll	235%	206%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	0.00%	0.00%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$3,838)	(\$3,082)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	89,412	19,849	22.26%	77,864	17,333
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		89,412	19,849		77,864	17,333
Total		\$89,412	\$19,849		\$77,864	\$17,333
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			22.20%			22.26%
Aggregate (Default)			22.20%			22.26%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	261,868	268,987
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	261,868	268,987
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Mosier Fire District/2873
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Mosier Fire District/2873

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Mosier Fire District/2873

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Mosier Fire District -- #2873

December 2019

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Executive Summary

Milliman has prepared this report for Mosier Fire District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Mosier Fire District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Mosier Fire District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	20.00%	14.58%	20.00%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(7.83%)	(7.83%)	(7.83%)	(7.83%)	(7.83%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	25.98%	20.56%	25.98%	16.43%	20.80%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	26.03%	20.61%	26.03%	16.43%	20.80%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Mosier Fire District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$162,953	\$100,197
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(67,568)	(69,863)
Allocated pooled OPSRP UAL	13,565	7,915
Side account	0	0
Net unfunded pension actuarial accrued liability	108,950	38,249
Combined valuation payroll	75,123	52,523
Net pension UAL as a percentage of payroll	145%	73%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(7.83%)	(11.02%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$1,101)	(\$602)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	75,123	15,025	20.05%	7,806	1,565
Total Police & Fire		75,123	15,025		7,806	1,565
Total		\$75,123	\$15,025		\$7,806	\$1,565
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.00%			20.05%
Aggregate (Default)			20.00%			20.05%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$69,863)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(14.41%)
B. Actual employer payroll	18,920
C. Payment to transition liability/(surplus)	(2,726)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(14.41%)
B. Actual employer payroll	28,500
C. Payment to transition liability/(surplus)	(4,107)
4. Supplemental payment to transition liability	0
5. Interest	(4,538)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$67,568)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(67,568)	(69,863)
2. Combined valuation payroll	75,123	52,523
3. Regular amortization factor	11.494	12.066
4. Total transition liability/(surplus) rate	(7.83%)	(11.02%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	75,123	52,523
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Oregon Health & Science University/2880
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Oregon Health & Science University/2880

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Oregon Health & Science University/2880

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Oregon Health & Science University -- #2880

December 2019

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 Oregon Health & Science University to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Oregon Health & Science University.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Oregon Health & Science University

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.92%	14.91%	20.00%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(6.35%)	(6.35%)	(6.35%)	(6.35%)	(6.35%)
Side account rate relief ²	(0.81%)	(0.81%)	(0.81%)	(0.81%)	(0.81%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	21.57%	21.56%	26.65%	17.10%	21.47%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	21.62%	21.61%	26.70%	17.10%	21.47%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Oregon Health & Science University

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$697,572,077	\$600,345,364
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(155,271,769)	(167,883,817)
Allocated pooled OPSRP UAL	58,067,298	47,422,587
Side account	24,258,658	15,904,020
Net unfunded pension actuarial accrued liability	576,108,948	463,980,114
Combined valuation payroll	321,588,625	314,700,614
Net pension UAL as a percentage of payroll	179%	147%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(6.35%)	(6.42%)
Side account rate relief	(0.81%)	(0.44%)
Allocated pooled RHIA UAL	(\$4,713,776)	(\$3,605,900)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$77,072,011	\$13,109,949	17.17%	\$86,934,080	\$14,926,582
Tier 2 General Service	12.84%	78,241,577	10,046,218	12.64%	80,363,865	10,157,993
Total General Service		155,313,588	23,156,167		167,297,945	25,084,575
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	213,706	42,741	20.05%	387,730	77,740
Total Police & Fire		213,706	42,741		387,730	77,740
Total		\$155,527,294	\$23,198,908		\$167,685,675	\$25,162,315

Total normal cost rate

General Service	14.91%	14.99%
Police & Fire	20.00%	20.05%
Aggregate (Default)	14.92%	15.01%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$167,883,817)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(7.10%)
B. Actual employer payroll	164,277,889
C. Payment to transition liability/(surplus)	(11,663,730)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(7.10%)
B. Actual employer payroll	160,239,703
C. Payment to transition liability/(surplus)	(11,377,019)
4. Supplemental payment to transition liability	0
5. Interest	(10,428,701)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$155,271,769)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(155,271,769)	(167,883,817)
2. Combined valuation payroll	321,588,625	314,700,614
3. Regular amortization factor	7.606	8.312
4. Total transition liability/(surplus) rate	(6.35%)	(6.42%)

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, 2017	N/A	\$15,904,020	\$15,904,020
2. Deposits during 2018	10,000,000		10,000,000
3. Administrative expenses	(1,500)	(1,000)	(2,500)
4. Amount transferred to employer reserves during 2018	(457,235)	(1,165,638)	(1,622,872)
5. Side account earnings during 2018	(105,655)	85,666	(19,989)
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)	\$9,435,610	\$14,823,048	\$24,258,658

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$7,432,328	\$8,004,662
Side Account 2	7,390,720	7,899,357
Side Account 3	9,435,610	0
Total	\$24,258,658	\$15,904,020

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$24,258,658	\$15,904,020
2. Combined valuation payroll	321,588,625	314,700,614
3. Average amortization factor	9.309	11.450
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(0.81%)	(0.44%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Lane Fire Authority/2883
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Lane Fire Authority/2883

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Lane Fire Authority/2883

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Lane Fire Authority -- #2883

December 2019

Secondary Employers

2609	Elmira-Noti Rural Fire Protection District
2636	Crow Valley Rural Fire Protection District

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Executive Summary

Milliman has prepared this report for Lane Fire Authority to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Lane Fire Authority.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Lane Fire Authority

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	20.72%	17.01%	21.22%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(1.55%)	(1.55%)	(1.55%)	(1.55%)	(1.55%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	32.98%	29.27%	33.48%	22.71%	27.08%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	33.03%	29.32%	33.53%	22.71%	27.08%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Lane Fire Authority

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$8,579,995	\$5,925,345
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(629,147)	(656,683)
Allocated pooled OPSRP UAL	714,216	468,056
Side account	0	0
Net unfunded pension actuarial accrued liability	8,665,064	5,736,718
Combined valuation payroll	3,955,475	3,106,062
Net pension UAL as a percentage of payroll	219%	185%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(1.55%)	(1.94%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$57,978)	(\$35,590)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$181,612	\$30,892	17.17%	\$158,111	\$27,148
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		181,612	30,892		158,111	27,148
Tier 1 Police & Fire	22.20%	751,931	166,929	22.26%	678,430	151,019
Tier 2 Police & Fire	20.00%	608,755	121,751	20.05%	593,021	118,901
Total Police & Fire		1,360,686	288,680		1,271,451	269,920
Total		\$1,542,298	\$319,572		\$1,429,562	\$297,068
Total normal cost rate						
General Service			17.01%			17.17%
Police & Fire			21.22%			21.23%
Aggregate (Default)			20.72%			20.78%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$656,683)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(2.37%)
B. Actual employer payroll	1,743,374
C. Payment to transition liability/(surplus)	(41,318)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(2.37%)
B. Actual employer payroll	2,112,770
C. Payment to transition liability/(surplus)	(49,427)
4. Supplemental payment to transition liability	0
5. Interest	(40,748)
6. Adjustment due to merged, spun-off, or allocated employers	(22,461)
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$629,147)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(629,147)	(656,683)
2. Combined valuation payroll	3,955,475	3,106,062
3. Regular amortization factor	10.288	10.901
4. Total transition liability/(surplus) rate	(1.55%)	(1.94%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	3,955,475	3,106,062
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

North Central Public Health District/2884
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
North Central Public Health District/2884

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
North Central Public Health District/2884

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

North Central Public Health District -- #2884

December 2019

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Executive Summary

Milliman has prepared this report for North Central Public Health District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to North Central Public Health District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for North Central Public Health District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	16.33%	16.33%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	30.14%	30.14%	34.52%	24.26%	28.63%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	30.19%	30.19%	34.57%	24.26%	28.63%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

North Central Public Health District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$3,228,838	\$2,227,922
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	268,775	175,988
Side account	0	0
Net unfunded pension actuarial accrued liability	3,497,613	2,403,910
Combined valuation payroll	1,488,531	1,167,875
Net pension UAL as a percentage of payroll	235%	206%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	0.00%	0.00%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$21,819)	(\$13,382)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$312,965	\$53,235	17.17%	\$305,289	\$52,418
Tier 2 General Service	12.84%	61,087	7,844	12.64%	60,177	7,606
Total General Service		374,052	61,079		365,466	60,024
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$374,052	\$61,079		\$365,466	\$60,024
Total normal cost rate						
General Service			16.33%			16.42%
Police & Fire			20.71%			20.83%
Aggregate (Default)			16.33%			16.42%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	1,488,531	1,167,875
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	1,488,531	1,167,875
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Idanha-Detroit Rural Fire Protection District/2886
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Idanha-Detroit Rural Fire Protection District/2886

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Idanha-Detroit Rural Fire Protection District/2886

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Idanha-Detroit Rural Fire Protection District -- #2886

December 2019

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 Idanha-Detroit Rural Fire Protection District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Idanha-Detroit Rural Fire Protection District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Idanha-Detroit Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	15.78%	14.58%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	29.59%	28.39%	34.52%	24.26%	28.63%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	29.64%	28.44%	34.57%	24.26%	28.63%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Idanha-Detroit Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$607,760	\$666,469
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	50,591	52,646
Side account	0	0
Net unfunded pension actuarial accrued liability	658,351	719,115
Combined valuation payroll	280,184	349,362
Net pension UAL as a percentage of payroll	235%	206%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	0.00%	0.00%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$4,107)	(\$4,003)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$0	\$0	17.17%	\$0	\$0
Tier 2 General Service	12.84%	0	0	12.64%	0	0
Total General Service		0	0		0	0
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$0	\$0		\$0	\$0
Total normal cost rate						
General Service			14.58%			14.62%
Police & Fire			20.71%			20.83%
Aggregate (Default)			15.78%			15.83%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	280,184	349,362
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	280,184	349,362
3. Average amortization factor	7.606	8.312
4. Total side account rate $(-1. \div 2. \div 3.)^1$	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Oak Lodge Water Services District/2888
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Oak Lodge Water Services District/2888

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Oak Lodge Water Services District/2888

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Oak Lodge Water Services District -- #2888

December 2019

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 Oak Lodge Water Services District to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Oak Lodge Water Services District.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Oak Lodge Water Services District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.25%	14.25%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(2.36%)	(2.36%)	(2.36%)	(2.36%)	(2.36%)
Side account rate relief ²	0.00%	0.00%	0.00%	0.00%	0.00%
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	25.70%	25.70%	32.16%	21.90%	26.27%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	25.75%	25.75%	32.21%	21.90%	26.27%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Oak Lodge Water Services District

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$6,202,729	\$4,958,171
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(851,884)	(874,906)
Allocated pooled OPSRP UAL	516,328	391,657
Side account	0	0
Net unfunded pension actuarial accrued liability	5,867,173	4,474,922
Combined valuation payroll	2,859,528	2,599,070
Net pension UAL as a percentage of payroll	205%	172%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(2.36%)	(2.56%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	(\$41,914)	(\$29,781)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$469,644	\$79,886	17.17%	\$357,357	\$61,358
Tier 2 General Service	12.84%	914,579	117,432	12.64%	918,746	116,129
Total General Service		1,384,223	197,318		1,276,103	177,487
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$1,384,223	\$197,318		\$1,276,103	\$177,487
Total normal cost rate						
General Service			14.25%			13.91%
Police & Fire			20.71%			20.83%
Aggregate (Default)			14.25%			13.91%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	(\$874,906)
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	(2.93%)
B. Actual employer payroll	1,370,217
C. Payment to transition liability/(surplus)	(40,147)
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	(2.93%)
B. Actual employer payroll	1,368,283
C. Payment to transition liability/(surplus)	(40,091)
4. Supplemental payment to transition liability	0
5. Interest	(57,216)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$851,884)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	(851,884)	(874,906)
2. Combined valuation payroll	2,859,528	2,599,070
3. Regular amortization factor	12.618	13.151
4. Total transition liability/(surplus) rate	(2.36%)	(2.56%)

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, 2017	N/A		
2. Deposits during 2018			
3. Administrative expenses			
4. Amount transferred to employer reserves during 2018			
5. Side account earnings during 2018			
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	0	0
Side Account 2	0	0
Side Account 3	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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$0	\$0
2. Combined valuation payroll	2,859,528	2,599,070
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	0.00%	0.00%

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Clatsop Community College/2900
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Clatsop Community College/2900

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Clatsop Community College/2900

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Clatsop Community College -- #2900

December 2019

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Executive Summary

Milliman has prepared this report for Clatsop Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Clatsop Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Clatsop Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(10.94%)	(10.94%)	(10.94%)	(10.94%)	(10.94%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	18.89%	18.89%	25.20%	14.94%	19.31%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	18.94%	18.94%	25.25%	14.94%	19.31%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Clatsop Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$14,328,787	\$11,177,305
Allocated pre-SLGRP pooled liability/(surplus)	815,844	834,133
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	1,192,757	882,920
Side account	5,496,780	6,252,615
Net unfunded pension actuarial accrued liability	10,840,608	6,641,743
Combined valuation payroll	6,605,733	5,859,136
Net pension UAL as a percentage of payroll	164%	113%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(10.94%)	(12.84%)
Allocated pooled RHIA UAL	(\$96,825)	(\$67,135)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	6,605,733	5,859,136
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$6,252,615	\$6,252,615
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(794,464)	(794,464)
5. Side account earnings during 2018		39,129	39,129
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$5,496,780	\$5,496,780

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$5,496,780	\$6,252,615
Side Account 2	0	0
Side Account 3	0	0
Total	\$5,496,780	\$6,252,615

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$5,496,780	\$6,252,615
2. Combined valuation payroll	6,605,733	5,859,136
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(10.94%)	(12.84%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Blue Mountain Community College/2901
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Blue Mountain Community College/2901

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Blue Mountain Community College/2901

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Blue Mountain Community College -- #2901

December 2019

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Executive Summary

Milliman has prepared this report for Blue Mountain Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Blue Mountain Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Blue Mountain Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(9.88%)	(9.88%)	(9.88%)	(9.88%)	(9.88%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	19.95%	19.95%	26.26%	16.00%	20.37%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	20.00%	20.00%	26.31%	16.00%	20.37%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Blue Mountain Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$22,896,744	\$20,784,135
Allocated pre-SLGRP pooled liability/(surplus)	1,303,682	1,551,065
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	1,905,971	1,641,784
Side account	7,933,983	8,921,842
Net unfunded pension actuarial accrued liability	18,172,414	15,055,142
Combined valuation payroll	10,555,658	10,895,029
Net pension UAL as a percentage of payroll	172%	138%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(9.88%)	(9.85%)
Allocated pooled RHIA UAL	(\$154,723)	(\$124,837)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	10,555,658	10,895,029
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$8,921,842	\$8,921,842
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(1,041,686)	(1,041,686)
5. Side account earnings during 2018		54,328	54,328
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$7,933,983	\$7,933,983

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$7,933,983	\$8,921,842
Side Account 2	0	0
Side Account 3	0	0
Total	\$7,933,983	\$8,921,842

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$7,933,983	\$8,921,842
2. Combined valuation payroll	10,555,658	10,895,029
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(9.88%)	(9.85%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Treasure Valley Community College/2902
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Treasure Valley Community College/2902

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Treasure Valley Community College/2902

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Treasure Valley Community College -- #2902

December 2019

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Executive Summary

Milliman has prepared this report for Treasure Valley Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Treasure Valley Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Treasure Valley Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(16.03%)	(16.03%)	(16.03%)	(16.03%)	(16.03%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	13.80%	13.80%	20.11%	9.85%	14.22%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	13.85%	13.85%	20.16%	9.85%	14.22%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Treasure Valley Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$19,436,782	\$16,862,870
Allocated pre-SLGRP pooled liability/(surplus)	1,106,681	1,258,431
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	1,617,957	1,332,035
Side account	10,921,806	11,855,605
Net unfunded pension actuarial accrued liability	11,239,614	7,597,731
Combined valuation payroll	8,960,577	8,839,504
Net pension UAL as a percentage of payroll	125%	86%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(16.03%)	(16.14%)
Allocated pooled RHIA UAL	(\$131,342)	(\$101,285)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	8,960,577	8,839,504
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$11,855,605	\$11,855,605
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(999,156)	(999,156)
5. Side account earnings during 2018		65,857	65,857
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$10,921,806	\$10,921,806

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$10,921,806	\$11,855,605
Side Account 2	0	0
Side Account 3	0	0
Total	\$10,921,806	\$11,855,605

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$10,921,806	\$11,855,605
2. Combined valuation payroll	8,960,577	8,839,504
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(16.03%)	(16.14%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Umpqua Community College/2903
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Umpqua Community College/2903

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Umpqua Community College/2903

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Umpqua Community College -- #2903

December 2019

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Executive Summary

Milliman has prepared this report for Umpqua Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Umpqua Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Umpqua Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(10.18%)	(10.18%)	(10.18%)	(10.18%)	(10.18%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	19.65%	19.65%	25.96%	15.70%	20.07%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	19.70%	19.70%	26.01%	15.70%	20.07%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Umpqua Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$25,610,485	\$21,019,647
Allocated pre-SLGRP pooled liability/(surplus)	1,458,196	1,568,640
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	2,131,868	1,660,388
Side account	9,137,583	9,946,440
Net unfunded pension actuarial accrued liability	20,062,966	14,302,235
Combined valuation payroll	11,806,724	11,018,484
Net pension UAL as a percentage of payroll	170%	130%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(10.18%)	(10.86%)
Allocated pooled RHIA UAL	(\$173,060)	(\$126,252)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	11,806,724	11,018,484
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$9,946,440	\$9,946,440
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(865,448)	(865,448)
5. Side account earnings during 2018		57,091	57,091
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$9,137,583	\$9,137,583

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$9,137,583	\$9,946,440
Side Account 2	0	0
Side Account 3	0	0
Total	\$9,137,583	\$9,946,440

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$9,137,583	\$9,946,440
2. Combined valuation payroll	11,806,724	11,018,484
3. Average amortization factor	7.606	8.312
4. Total side account rate $(-1. \div 2. \div 3.)^1$	(10.18%)	(10.86%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Lane Community College/2904
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Lane Community College/2904

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Lane Community College/2904

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Lane Community College -- #2904

December 2019

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 Lane Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Lane Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Lane Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(15.05%)	(15.05%)	(15.05%)	(15.05%)	(15.05%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	14.78%	14.78%	21.09%	10.83%	15.20%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	14.83%	14.83%	21.14%	10.83%	15.20%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Lane Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$98,179,169	\$85,370,797
Allocated pre-SLGRP pooled liability/(surplus)	5,590,071	6,370,995
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	8,172,631	6,743,625
Side account	51,825,966	56,864,157
Net unfunded pension actuarial accrued liability	60,115,905	41,621,260
Combined valuation payroll	45,261,708	44,751,311
Net pension UAL as a percentage of payroll	133%	93%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(15.05%)	(15.29%)
Allocated pooled RHIA UAL	(\$663,436)	(\$512,769)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	45,261,708	44,751,311
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$56,864,157	\$56,864,157
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(5,365,824)	(5,365,824)
5. Side account earnings during 2018		328,132	328,132
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$51,825,966	\$51,825,966

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$51,825,966	\$56,864,157
Side Account 2	0	0
Side Account 3	0	0
Total	\$51,825,966	\$56,864,157

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$51,825,966	\$56,864,157
2. Combined valuation payroll	45,261,708	44,751,311
3. Average amortization factor	7.606	8.312
4. Total side account rate $(-1. \div 2. \div 3.)^1$	(15.05%)	(15.29%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Mt Hood Community College/2905
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Mt Hood Community College/2905

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Mt Hood Community College/2905

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Mt Hood Community College -- #2905

December 2019

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Executive Summary

Milliman has prepared this report for Mt Hood Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Mt Hood Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Mt Hood Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(14.44%)	(14.44%)	(14.44%)	(14.44%)	(14.44%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	15.39%	15.39%	21.70%	11.44%	15.81%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	15.44%	15.44%	21.75%	11.44%	15.81%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Mt Hood Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$96,143,183	\$78,986,242
Allocated pre-SLGRP pooled liability/(surplus)	5,474,147	5,894,533
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	8,003,151	6,239,295
Side account	48,674,624	55,745,978
Net unfunded pension actuarial accrued liability	60,945,857	35,374,092
Combined valuation payroll	44,323,096	41,404,532
Net pension UAL as a percentage of payroll	138%	85%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(14.44%)	(16.20%)
Allocated pooled RHIA UAL	(\$649,678)	(\$474,421)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	44,323,096	41,404,532
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$55,745,978	\$55,745,978
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(7,413,957)	(7,413,957)
5. Side account earnings during 2018		343,103	343,103
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$48,674,624	\$48,674,624

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$48,674,624	\$55,745,978
Side Account 2	0	0
Side Account 3	0	0
Total	\$48,674,624	\$55,745,978

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$48,674,624	\$55,745,978
2. Combined valuation payroll	44,323,096	41,404,532
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(14.44%)	(16.20%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Klamath Community College/2906
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Klamath Community College/2906

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Klamath Community College/2906

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Klamath Community College -- #2906

December 2019

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Executive Summary

Milliman has prepared this report for Klamath Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Klamath Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Klamath Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(0.47%)	(0.47%)	(0.47%)	(0.47%)	(0.47%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	29.36%	29.36%	35.67%	25.41%	29.78%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	29.41%	29.41%	35.72%	25.41%	29.78%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Klamath Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$16,525,784	\$13,503,429
Allocated pre-SLGRP pooled liability/(surplus)	940,936	1,007,725
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	1,375,639	1,066,665
Side account	273,103	324,003
Net unfunded pension actuarial accrued liability	18,569,256	15,253,816
Combined valuation payroll	7,618,573	7,078,488
Net pension UAL as a percentage of payroll	244%	216%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(0.47%)	(0.55%)
Allocated pooled RHIA UAL	(\$111,671)	(\$81,107)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	7,618,573	7,078,488
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$324,003	\$324,003
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(52,691)	(52,691)
5. Side account earnings during 2018		2,291	2,291
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$273,103	\$273,103

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$273,103	\$324,003
Side Account 2	0	0
Side Account 3	0	0
Total	\$273,103	\$324,003

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$273,103	\$324,003
2. Combined valuation payroll	7,618,573	7,078,488
3. Average amortization factor	7.606	8.312
4. Total side account rate $(-1. \div 2. \div 3.)^1$	(0.47%)	(0.55%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Clackamas Community College/2908
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Clackamas Community College/2908

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Clackamas Community College/2908

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Clackamas Community College -- #2908

December 2019

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Executive Summary

Milliman has prepared this report for Clackamas Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Clackamas Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Clackamas Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(8.89%)	(8.89%)	(8.89%)	(8.89%)	(8.89%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	20.94%	20.94%	27.25%	16.99%	21.36%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	20.99%	20.99%	27.30%	16.99%	21.36%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Clackamas Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$69,371,526	\$56,801,691
Allocated pre-SLGRP pooled liability/(surplus)	3,949,837	4,238,959
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	5,774,625	4,486,889
Side account	21,617,116	24,402,563
Net unfunded pension actuarial accrued liability	57,478,872	41,124,976
Combined valuation payroll	31,981,059	29,775,406
Net pension UAL as a percentage of payroll	180%	138%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(8.89%)	(9.86%)
Allocated pooled RHIA UAL	(\$468,771)	(\$341,172)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	31,981,059	29,775,406
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$24,402,563	\$24,402,563
2. Deposits during 2018			
3. Administrative expenses		(1,000)	(1,000)
4. Amount transferred to employer reserves during 2018		(2,936,437)	(2,936,437)
5. Side account earnings during 2018		151,990	151,990
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$21,617,116	\$21,617,116

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$11,425,405	\$12,897,769
Side Account 2	10,191,711	11,504,795
Side Account 3	0	0
Total	\$21,617,116	\$24,402,563

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$21,617,116	\$24,402,563
2. Combined valuation payroll	31,981,059	29,775,406
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(8.89%)	(9.86%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Linn-Benton Community College/2910
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.



December 2019
Linn-Benton Community College/2910

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Linn-Benton Community College/2910

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Linn-Benton Community College -- #2910

December 2019

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Executive Summary

Milliman has prepared this report for Linn-Benton Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Linn-Benton Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Linn-Benton Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(9.98%)	(9.98%)	(9.98%)	(9.98%)	(9.98%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	19.85%	19.85%	26.16%	15.90%	20.27%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	19.90%	19.90%	26.21%	15.90%	20.27%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Linn-Benton Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$63,457,483	\$52,647,259
Allocated pre-SLGRP pooled liability/(surplus)	3,613,107	3,928,925
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	5,282,328	4,158,722
Side account	22,203,769	24,727,611
Net unfunded pension actuarial accrued liability	50,149,149	36,007,295
Combined valuation payroll	29,254,618	27,597,656
Net pension UAL as a percentage of payroll	171%	130%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(9.98%)	(10.78%)
Allocated pooled RHIA UAL	(\$428,808)	(\$316,219)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	29,254,618	27,597,656
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$24,727,611	\$24,727,611
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(2,671,802)	(2,671,802)
5. Side account earnings during 2018		148,460	148,460
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$22,203,769	\$22,203,769

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$22,203,769	\$24,727,611
Side Account 2	0	0
Side Account 3	0	0
Total	\$22,203,769	\$24,727,611

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$22,203,769	\$24,727,611
2. Combined valuation payroll	29,254,618	27,597,656
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(9.98%)	(10.78%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Portland Community College/2918
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Portland Community College/2918

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Portland Community College/2918

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Portland Community College -- #2918

December 2019

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Executive Summary

Milliman has prepared this report for Portland Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Portland Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Portland Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(18.77%)	(18.77%)	(18.77%)	(18.77%)	(18.77%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	11.06%	11.06%	17.37%	7.11%	11.48%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	11.11%	11.11%	17.42%	7.11%	11.48%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Portland Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$290,199,350	\$247,123,452
Allocated pre-SLGRP pooled liability/(surplus)	16,523,208	18,442,166
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	24,156,776	19,520,820
Side account	264,672,410	110,143,803
Net unfunded pension actuarial accrued liability	66,206,924	174,942,635
Combined valuation payroll	133,785,186	129,541,938
Net pension UAL as a percentage of payroll	49%	135%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(18.77%)	(10.23%)
Allocated pooled RHIA UAL	(\$1,960,994)	(\$1,484,317)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	133,785,186	129,541,938
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$110,143,803	\$110,143,803
2. Deposits during 2018	170,702,833		170,702,833
3. Administrative expenses	(1,500)	(500)	(2,000)
4. Amount transferred to employer reserves during 2018	(936,129)	(12,261,719)	(13,197,848)
5. Side account earnings during 2018	(3,633,238)	658,859	(2,974,379)
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)	\$166,131,966	\$98,540,444	\$264,672,410

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$98,540,444	\$110,143,803
Side Account 2	166,131,966	0
Side Account 3	0	0
Total	\$264,672,410	\$110,143,803

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$264,672,410	\$110,143,803
2. Combined valuation payroll	133,785,186	129,541,938
3. Average amortization factor	10.540	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(18.77%)	(10.23%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Chemeketa Community College/2919
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Chemeketa Community College/2919

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Chemeketa Community College/2919

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Chemeketa Community College -- #2919

December 2019

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Executive Summary

Milliman has prepared this report for Chemeketa Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Chemeketa Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Chemeketa Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(11.14%)	(11.14%)	(11.14%)	(11.14%)	(11.14%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	18.69%	18.69%	25.00%	14.74%	19.11%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	18.74%	18.74%	25.05%	14.74%	19.11%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Chemeketa Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$111,001,127	\$90,356,247
Allocated pre-SLGRP pooled liability/(surplus)	6,320,120	6,743,046
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	9,239,956	7,137,437
Side account	43,330,233	48,276,262
Net unfunded pension actuarial accrued liability	83,230,970	55,960,468
Combined valuation payroll	51,172,776	47,364,680
Net pension UAL as a percentage of payroll	163%	118%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(11.14%)	(12.26%)
Allocated pooled RHIA UAL	(\$750,079)	(\$542,714)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	51,172,776	47,364,680
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$48,276,262	\$48,276,262
2. Deposits during 2018			
3. Administrative expenses		(1,000)	(1,000)
4. Amount transferred to employer reserves during 2018		(5,236,676)	(5,236,676)
5. Side account earnings during 2018		291,647	291,647
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$43,330,233	\$43,330,233

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$23,608,503	\$26,304,667
Side Account 2	19,721,730	21,971,595
Side Account 3	0	0
Total	\$43,330,233	\$48,276,262

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$43,330,233	\$48,276,262
2. Combined valuation payroll	51,172,776	47,364,680
3. Average amortization factor	7.606	8.312
4. Total side account rate $(-1. \div 2. \div 3.)^1$	(11.14%)	(12.26%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Rogue Community College/2922
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Rogue Community College/2922

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Rogue Community College/2922

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Rogue Community College -- #2922

December 2019

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Executive Summary

Milliman has prepared this report for Rogue Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Rogue Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Rogue Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(9.59%)	(9.59%)	(9.59%)	(9.59%)	(9.59%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	20.24%	20.24%	26.55%	16.29%	20.66%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	20.29%	20.29%	26.60%	16.29%	20.66%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Rogue Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$44,320,459	\$38,063,047
Allocated pre-SLGRP pooled liability/(surplus)	2,523,494	2,840,544
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	3,689,324	3,006,683
Side account	14,903,052	16,653,873
Net unfunded pension actuarial accrued liability	35,630,225	27,256,401
Combined valuation payroll	20,432,233	19,952,622
Net pension UAL as a percentage of payroll	174%	137%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(9.59%)	(10.04%)
Allocated pooled RHIA UAL	(\$299,491)	(\$228,621)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	20,432,233	19,952,622
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$16,653,873	\$16,653,873
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(1,844,746)	(1,844,746)
5. Side account earnings during 2018		94,425	94,425
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$14,903,052	\$14,903,052

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$14,903,052	\$16,653,873
Side Account 2	0	0
Side Account 3	0	0
Total	\$14,903,052	\$16,653,873

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$14,903,052	\$16,653,873
2. Combined valuation payroll	20,432,233	19,952,622
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(9.59%)	(10.04%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Oregon Coast Community College/2995
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Oregon Coast Community College/2995

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Oregon Coast Community College/2995

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Oregon Coast Community College -- #2995

December 2019

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Executive Summary

Milliman has prepared this report for Oregon Coast Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Oregon Coast Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Oregon Coast Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(8.31%)	(8.31%)	(8.31%)	(8.31%)	(8.31%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	21.52%	21.52%	27.83%	17.57%	21.94%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	21.57%	21.57%	27.88%	17.57%	21.94%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Oregon Coast Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$5,726,867	\$4,715,127
Allocated pre-SLGRP pooled liability/(surplus)	326,073	351,877
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	476,716	372,458
Side account	1,669,201	1,965,728
Net unfunded pension actuarial accrued liability	4,860,455	3,473,734
Combined valuation payroll	2,640,150	2,471,666
Net pension UAL as a percentage of payroll	184%	141%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(8.31%)	(9.57%)
Allocated pooled RHIA UAL	(\$38,699)	(\$28,321)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	2,640,150	2,471,666
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$1,965,728	\$1,965,728
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(307,351)	(307,351)
5. Side account earnings during 2018		11,324	11,324
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$1,669,201	\$1,669,201

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$1,669,201	\$1,965,728
Side Account 2	0	0
Side Account 3	0	0
Total	\$1,669,201	\$1,965,728

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$1,669,201	\$1,965,728
2. Combined valuation payroll	2,640,150	2,471,666
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(8.31%)	(9.57%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Columbia Gorge Community College/2996
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.



December 2019
Columbia Gorge Community College/2996

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Columbia Gorge Community College/2996

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Columbia Gorge Community College -- #2996

December 2019

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Executive Summary

Milliman has prepared this report for Columbia Gorge Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Columbia Gorge Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Columbia Gorge Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(8.23%)	(8.23%)	(8.23%)	(8.23%)	(8.23%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	21.60%	21.60%	27.91%	17.65%	22.02%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	21.65%	21.65%	27.96%	17.65%	22.02%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Columbia Gorge Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$10,435,267	\$8,907,524
Allocated pre-SLGRP pooled liability/(surplus)	594,157	664,745
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	868,653	703,625
Side account	3,009,698	3,335,171
Net unfunded pension actuarial accrued liability	8,888,379	6,940,723
Combined valuation payroll	4,810,776	4,669,318
Net pension UAL as a percentage of payroll	185%	149%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(8.23%)	(8.59%)
Allocated pooled RHIA UAL	(\$70,515)	(\$53,502)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	4,810,776	4,669,318
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$3,335,171	\$3,335,171
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(345,311)	(345,311)
5. Side account earnings during 2018		20,339	20,339
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$3,009,698	\$3,009,698

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$3,009,698	\$3,335,171
Side Account 2	0	0
Side Account 3	0	0
Total	\$3,009,698	\$3,335,171

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$3,009,698	\$3,335,171
2. Combined valuation payroll	4,810,776	4,669,318
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(8.23%)	(8.59%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Tillamook Bay Community College/2997
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Tillamook Bay Community College/2997

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Tillamook Bay Community College/2997

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Tillamook Bay Community College -- #2997

December 2019

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Executive Summary

Milliman has prepared this report for Tillamook Bay Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Tillamook Bay Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Tillamook Bay Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(6.35%)	(6.35%)	(6.35%)	(6.35%)	(6.35%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	23.48%	23.48%	29.79%	19.53%	23.90%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	23.53%	23.53%	29.84%	19.53%	23.90%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Tillamook Bay Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$4,719,489	\$3,854,751
Allocated pre-SLGRP pooled liability/(surplus)	268,716	287,670
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	392,860	304,495
Side account	1,050,875	1,223,494
Net unfunded pension actuarial accrued liability	4,330,190	3,223,422
Combined valuation payroll	2,175,738	2,020,658
Net pension UAL as a percentage of payroll	199%	160%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(6.35%)	(7.28%)
Allocated pooled RHIA UAL	(\$31,891)	(\$23,153)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	2,175,738	2,020,658
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$1,223,494	\$1,223,494
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(180,152)	(180,152)
5. Side account earnings during 2018		8,032	8,032
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$1,050,875	\$1,050,875

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$1,050,875	\$1,223,494
Side Account 2	0	0
Side Account 3	0	0
Total	\$1,050,875	\$1,223,494

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$1,050,875	\$1,223,494
2. Combined valuation payroll	2,175,738	2,020,658
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(6.35%)	(7.28%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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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.

December 2019

Southwestern Community College/2998
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarialservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Southwestern Community College/2998

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Southwestern Community College/2998

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Southwestern Community College -- #2998

December 2019

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Executive Summary

Milliman has prepared this report for Southwestern Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Southwestern Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Southwestern Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(11.87%)	(11.87%)	(11.87%)	(11.87%)	(11.87%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	17.96%	17.96%	24.27%	14.01%	18.38%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	18.01%	18.01%	24.32%	14.01%	18.38%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Southwestern Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$24,392,864	\$21,039,838
Allocated pre-SLGRP pooled liability/(surplus)	1,388,867	1,570,147
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	2,030,511	1,661,983
Side account	10,156,231	11,254,669
Net unfunded pension actuarial accrued liability	17,656,011	13,017,299
Combined valuation payroll	11,245,386	11,029,068
Net pension UAL as a percentage of payroll	157%	118%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(11.87%)	(12.28%)
Allocated pooled RHIA UAL	(\$164,832)	(\$126,373)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018	
(1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	11,245,386	11,029,068
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$11,254,669	\$11,254,669
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(1,165,520)	(1,165,520)
5. Side account earnings during 2018		67,583	67,583
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$10,156,231	\$10,156,231

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$10,156,231	\$11,254,669
Side Account 2	0	0
Side Account 3	0	0
Total	\$10,156,231	\$11,254,669

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$10,156,231	\$11,254,669
2. Combined valuation payroll	11,245,386	11,029,068
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(11.87%)	(12.28%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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December 2019

Central Oregon Community College/2999
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, 2018. 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, 2021 through June 30, 2023 will be calculated in the December 31, 2019 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2018, as modified by Senate Bill 1049 which was enacted in June 2019. The report also reflects the Tier 1/Tier 2 reamortization provisions of Senate Bill 1049. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), 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 actuarieservices@pers.state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, 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 1/Tier 2 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.

December 2019
Central Oregon Community College/2999

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.

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 a reasonable estimate of anticipated experience affecting the System.

A 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 a 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 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 additional cost or contribution requirements 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 appropriateness of the assumptions and adopted them as indicated in October 2019.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2021 to June 2023 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.



December 2019
Central Oregon Community College/2999

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

Sincerely,

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2018

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Central Oregon Community College -- #2999

December 2019

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Executive Summary

Milliman has prepared this report for Central Oregon Community College to:

- Provide summary December 31, 2018 valuation results for the Tier 1/Tier 2 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, 2018, on estimated employer-specific contribution rates effective July 1, 2021 through June 30, 2023, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2018.

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, 2018 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Central Oregon Community College.

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2018 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.

Advisory 2021 - 2023 Employer Rates Calculated as of December 31, 2018 for Central Oregon Community College

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default All T1/T2 Payroll	Optional Separate Rates General Service Police & Fire		General Service	Police & Fire
Pension					
Normal cost rate	14.40%	14.40%	20.71%	8.70%	13.07%
Tier 1/Tier 2 UAL rate ¹	14.50%	14.50%	14.50%	14.50%	14.50%
OPSRP UAL rate	1.76%	1.76%	1.76%	1.76%	1.76%
Pre-SLGRP pooled liability rate	1.62%	1.62%	1.62%	1.62%	1.62%
Transition liability/(surplus) rate ²	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief ²	(5.21%)	(5.21%)	(5.21%)	(5.21%)	(5.21%)
Member redirect offset ³	(2.45%)	(2.45%)	(2.45%)	(0.70%)	(0.70%)
Net employer pension contribution rate	24.62%	24.62%	30.93%	20.67%	25.04%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	0.00%	0.00%	0.00%	0.00%	0.00%
Net retiree healthcare rate	0.05%	0.05%	0.05%	0.00%	0.00%
Total net employer contribution rate	24.67%	24.67%	30.98%	20.67%	25.04%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² 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%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) are anticipated to 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 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts. In addition, changes in an individual employer's workforce between Tier 1 and Tier 2 or between general service and police and fire can impact that employer's normal cost rate in a way that is not limited by the collar. The table below shows the possible minimum and maximum rates for the SLGRP first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the Pool's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the Pool's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. The rates shown are before any adjustment for side account rate offsets or pre-SLGRP liabilities.

For comparison, the Pool's funded status as of December 31, 2018 is 68%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	26.26%	26.26%
Minimum 2021-2023 Rate	21.01%	15.76%
Maximum 2021-2023 Rate	31.51%	36.76%

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's normal cost rate, pre-SLGRP pooled liability rate, transition liability rate, and side account rate offsets.

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.

Central Oregon Community College

	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
Allocated pooled SLGRP T1/T2 UAL	\$52,818,829	\$45,248,192
Allocated pre-SLGRP pooled liability/(surplus)	3,007,369	3,376,752
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	4,396,745	3,574,253
Side account	9,642,282	10,776,026
Net unfunded pension actuarial accrued liability	50,580,661	41,423,171
Combined valuation payroll	24,350,078	23,719,070
Net pension UAL as a percentage of payroll	208%	175%
Pre-SLGRP pooled rate	1.62%	1.71%
Transition rate	0.00%	0.00%
Side account rate relief	(5.21%)	(5.47%)
Allocated pooled RHIA UAL	(\$356,918)	(\$271,778)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 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, 2018	December 31, 2017
Normal cost	\$362.9	\$381.5
Tier 1/Tier 2 valuation payroll	2,299.5	2,410.6
Normal cost rate	15.78%	15.83%
Actuarial accrued liability	\$43,149.3	\$42,150.7
Actuarial asset value	29,383.7	30,899.7
Unfunded actuarial accrued liability	13,765.6	11,251.0
Funded status	68%	73%
Combined valuation payroll	\$6,346.1	\$5,897.8
UAL as a percentage of payroll	217%	191%
UAL rate ¹	14.50%	10.36%
State and Community College Pre-SLGRP Pooled Liability	\$448.8	\$482.4
LGRP Pooled Liability	(191.8)	(206.0)
Total Transition Liability	(602.7)	(613.0)
Tier 1/Tier 2 Active Members		
▪ Count	28,056	30,397
▪ Average Age	53.8	53.4
▪ Average Service	21.2	20.5
▪ Average Valuation Salary (in dollars)	\$81,963	\$79,303
Tier 1/Tier 2 Dormant Members		
▪ Count	17,150	18,074
▪ Average Age	56.7	56.2
▪ Average Monthly Benefit (in dollars)	\$1,347	\$1,346
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	87,579	85,553
▪ Average Age	71.7	71.3
▪ Average Monthly Benefit (in dollars)	\$2,313	\$2,254

¹ The December 31, 2018 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2017). The City of Portland pays an additional 0.97% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.14% and 0.15% respectively at December 31, 2017).

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
General service normal cost	\$519.9	\$435.7
OPSRP general service valuation payroll	5,973.4	5,187.5
General service normal cost rate	8.70%	8.40%
Police and fire normal cost	\$104.9	\$86.6
OPSRP police and fire valuation payroll	802.5	664.5
Police and fire normal cost rate	13.07%	13.03%
Actuarial accrued liability	\$6,738.0	\$5,634.7
Actuarial asset value	4,783.0	4,116.5
Unfunded actuarial accrued liability	1,955.0	1,518.2
Funded status	71%	73%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	18%	15%
UAL rate	1.76%	1.45%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIA		
Normal cost	\$2.2	\$2.5
Tier 1 / Tier 2 valuation payroll	4,076.1	4,246.9
Normal cost rate	0.05%	0.06%
Actuarial accrued liability	\$411.7	\$437.6
Actuarial asset value	570.7	553.3
Unfunded actuarial accrued liability	(159.1)	(115.7)
Funded status	139%	126%
Combined valuation payroll	\$10,852.0	\$10,098.9
UAL as a percentage of payroll	(1%)	(1%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2018	December 31, 2017
RHIPA		
Normal cost	\$1.3	\$1.4
Tier 1 / Tier 2 valuation payroll	1,159.5	1,212.2
Normal cost rate	0.11%	0.12%
Actuarial accrued liability	\$62.7	\$69.4
Actuarial asset value	38.5	29.8
Unfunded actuarial accrued liability	24.3	39.5
Funded status	61%	43%
Combined valuation payroll	\$3,211.6	\$2,984.5
UAL as a percentage of payroll	1%	1%
UAL rate	0.22%	0.27%

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

Weighted Average Tier 1/Tier 2 Normal Cost

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 1/Tier 2 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 1/Tier 2 Normal Cost Rate

	December 31, 2018			December 31, 2017		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	17.01%	\$58,758,455	\$9,994,813	17.17%	\$66,219,389	\$11,369,869
Tier 2 General Service	12.84%	97,917,908	12,572,659	12.64%	101,527,904	12,833,127
Total General Service		156,676,363	22,567,472		167,747,293	24,202,996
Tier 1 Police & Fire	22.20%	0	0	22.26%	0	0
Tier 2 Police & Fire	20.00%	0	0	20.05%	0	0
Total Police & Fire		0	0		0	0
Total		\$156,676,363	\$22,567,472		\$167,747,293	\$24,202,996

Total normal cost rate

General Service	14.40%	14.43%
Police & Fire	20.71%	20.83%
Aggregate (Default)	14.40%	14.43%

An SLGRP employer that has no Tier 1/Tier 2 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, a transition liability or surplus was calculated to ensure that each 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, 2017	\$0
2. January 1, 2018 through June 30, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2018 through December 31, 2018	
A. Transition liability/(surplus) rate	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
4. Supplemental payment to transition liability	0
5. Interest	0
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2018 (1. - 2C. - 3C. - 4. + 5. + 6.)	\$0

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 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.

	December 31, 2018	December 31, 2017
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	24,350,078	23,719,070
3. Regular amortization factor	0.000	0.000
4. Total transition liability/(surplus) rate	0.00%	0.00%

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, 2017	N/A	\$10,776,026	\$10,776,026
2. Deposits during 2018			
3. Administrative expenses		(500)	(500)
4. Amount transferred to employer reserves during 2018		(1,197,252)	(1,197,252)
5. Side account earnings during 2018		64,009	64,009
6. Side account as of December 31, 2018 (1. + 2. + 3. + 4. + 5.)		\$9,642,282	\$9,642,282

Side Account Information

Side Account Balances

	December 31, 2018	December 31, 2017
Side Account 1	\$9,642,282	\$10,776,026
Side Account 2	0	0
Side Account 3	0	0
Total	\$9,642,282	\$10,776,026

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 fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2018	December 31, 2017
1. Total side account	\$9,642,282	\$10,776,026
2. Combined valuation payroll	24,350,078	23,719,070
3. Average amortization factor	7.606	8.312
4. Total side account rate (-1. ÷ 2. ÷ 3.) ¹	(5.21%)	(5.47%)

¹ 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.

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2018 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>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. 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. Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The collar's centering point for Tier 1/Tier 2 calculations is the sum of the Tier 1/Tier 2 Normal Cost and Tier 1/Tier 2 UAL Rates currently in effect. In the subsequent biennium, the increase in the sum of those two rate components is limited by the collar to 20% of the current sum of those two rate components, or 3% of payroll, if greater. If the funded status excluding side accounts is less than 70%, the width of the collar widens on a graded scale, reaching 40% of the current sum of the two rate components or 6% of payroll, if greater, if funded status excluding side accounts is 60% or less. A separate but parallel rate collar calculation is performed for the sum of the OPSRP Normal Cost and OPSRP UAL rates based on the funded status of the OPSRP program.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 7.1% in 2019 to 4.1% in 2094.
<i>Administrative Expenses</i>	<p>\$8.0 million, added to OPSRP normal cost.</p> <p>\$32.5 million, added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2017 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.

Changes in Economic Assumptions

- **Administrative Expenses**

Administrative expenses were assumed to be \$8.0 million per year for the OPSRP System and \$32.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

The updated mortality assumption uses the Pub-2010 base mortality tables (published in 2019) with group-specific job category adjustments. A projection scale for continued future mortality improvement based on the 60-year average of observed Social Security mortality improvement is applied generationally to the base tables.

- **Disability, Retirement, and Termination**

Rates for the disability, retirement, and termination assumptions were adjusted.

A complete summary of all assumptions used as part of the December 31, 2018 actuarial valuation is contained in the system-wide actuarial valuation report.

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Senate Bill 1049, signed into law in June 2019, made a number of changes to the PERS system, including:

- Effective with calendar year 2020, annual salary included in the calculation of Final Average Salary will be limited to \$195,000 (as indexed for inflation in future years).
- The PERS Board was required to implement a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which will set actuarially determined contribution rates for the 2021-2023 biennium.
- For years 2020 through 2024, the limitation on the hours that can be worked by a rehired retiree is eliminated. Effective January 1, 2020, contributions will also be charged on the payroll of rehired retirees.
- Effective July 1, 2020, a portion of the 6% of salary member contribution to the Individual Account Program (IAP) will be redirected to Employee Pension Stability Accounts, which will help fund the defined benefits provided under Tier 1/Tier 2 and OPSRP. For Tier 1/Tier 2 members, the prospectively redirected amount will be 2.5% of salary, and for OPSRP members the amount will be 0.75% of salary. The redirection will only apply to members earning \$2,500 per month or more (indexed for inflation).

The projected benefits in this valuation reflect the limit on annual salary starting in 2020, which reduced the actuarial accrued liability. The re-amortization of Tier 1/Tier 2 UAL is incorporated in the calculation of the advisory Tier 1/Tier 2 UAL rate. The changes related to the work after retirement provisions are not explicitly reflected in the determination of liabilities or contribution rates shown in this valuation. Our understanding is that redirected member contributions are expected to help pay the total collared contribution rates adopted for the 2021-2023 biennium and will serve as an offset to employer contributions, and we have illustrated that offset for advisory 2021-2023 rates shown in this 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 1/Tier 2 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

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

Pre-SLGRP Pooled Liability

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 sum of the normal cost rate and the associated UAL rate for a given experience-sharing pool. The width of the collar is determined by the pool’s current normal cost rate, UAL rate and funded status.

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. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions prior to GASB 75.

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 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 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

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.

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.



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