Milliman

Milliman
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November 2017

City of Dallas/2202
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
City of Dallas/2202

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Dallas -- #2202

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Dallas to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Dallas.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Dallas

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	16.51%	13.54%	20.88%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief [2]	(0.27%)	(0.27%)	(0.27%)	(0.27%)	(0.27%)
Net pension contribution rate	**26.79%**	**23.82%**	**31.16%**	**18.77%**	**23.50%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**27.28%**	**24.31%**	**31.65%**	**19.19%**	**23.92%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	**70% to 130%**	**Under 60% or Over 140%**
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Dallas

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$10,133,112	$8,601,101
Allocated pre-SLGRP pooled liability/(surplus)	(711,088)	(738,252)
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	809,203	638,457
Side account	114,162	120,106
Net unfunded pension actuarial accrued liability	10,117,065	8,381,200
Combined valuation payroll	4,700,235	4,490,992
Net pension UAL as a percentage of payroll	215%	187%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	0.00%	0.00%
Side account rate relief	(0.27%)	(0.28%)
Allocated pooled RHIA UAL	($640)	$21,807
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$257,285	$44,973	17.55%	$311,833	$54,727
Tier 2 General Service	12.54%	1,015,535	127,348	12.26%	1,047,503	128,424
Total General Service		**1,272,820**	**172,321**		**1,359,336**	**183,151**
Tier 1 Police & Fire	22.14%	411,535	91,114	21.37%	498,352	106,498
Tier 2 Police & Fire	19.73%	452,381	89,255	18.95%	448,477	84,986
Total Police & Fire		**863,916**	**180,369**		**946,829**	**191,484**
Total		**$2,136,736**	**$352,690**		**$2,306,165**	**$374,635**
Employer normal cost rate						
General Service			**13.54%**			**13.47%**
Police & Fire			**20.88%**			**20.22%**
Aggregate (Default)			**16.51%**			**16.24%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	$0
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	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, 2016	
(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, 2016	December 31, 2015
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	4,700,235	4,490,992
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, 2015	**N/A**	**$120,106**	**$120,106**
2. Deposits during 2016		N/A	
3. Administrative expenses		(1,000)	(1,000)
4. Amount transferred to employer reserves during 2016		(13,083)	(13,083)
5. Side account earnings during 2016		8,139	8,139
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***		**$114,162**	**$114,162**

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
Side Account 1	$114,162	$120,106
Side Account 2	0	0
Side Account 3	0	0
Total	**$114,162**	**$120,106**

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, 2016	December 31, 2015
1. Total side account	$114,162	$120,106
2. Combined valuation payroll	4,700,235	4,490,992
3. Average amortization factor	8.994	9.504
4. Total side account rate (-1. ÷ 2. ÷ 3.)[1]	(0.27%)	(0.28%)

[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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Dayton/2252
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
City of Dayton/2252

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

Milliman

ACTUARIAL VALUATION REPORT
DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Dayton -- #2252

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Dayton to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Dayton.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Dayton

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	15.34%	15.34%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	(5.90%)	(5.90%)	(5.90%)	(5.90%)	(5.90%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**19.99%**	**19.99%**	**25.31%**	**13.14%**	**17.87%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**20.48%**	**20.48%**	**25.80%**	**13.56%**	**18.29%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Dayton

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$965,374	$719,736
Allocated pre-SLGRP pooled liability/(surplus)	(67,745)	(61,777)
Transition liability/(surplus)	(237,785)	(254,454)
Allocated pooled OPSRP UAL	77,092	53,426
Side account	0	0
Net unfunded pension actuarial accrued liability	736,936	456,931
Combined valuation payroll	447,788	375,804
Net pension UAL as a percentage of payroll	165%	122%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	(5.90%)	(7.12%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($61)	$1,825
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			**December 31, 2015**		
	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	17.48%	$93,292	$16,307	17.55%	$89,986	$15,793
Tier 2 General Service	12.54%	71,560	8,974	12.26%	70,576	8,653
Total General Service		**164,852**	**25,281**		**160,562**	**24,446**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$164,852**	**$25,281**		**$160,562**	**$24,446**
Employer normal cost rate						
General Service			**15.34%**			**15.23%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**15.34%**			**15.23%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($254,454)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(7.88%)
B. Actual employer payroll	206,178
C. Payment to transition liability/(surplus)	(16,247)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(7.88%)
B. Actual employer payroll	215,891
C. Payment to transition liability/(surplus)	(17,012)
4. Supplemental payment to transition liability	0
5. Interest	(16,590)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($237,785)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(237,785)	(254,454)
2. Combined valuation payroll	447,788	375,804
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(5.90%)**	**(7.12%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	447,788	375,804
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Depoe Bay/2294
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

Milliman

November 2017
City of Depoe Bay/2294

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

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November 2017
City of Depoe Bay/2294

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Depoe Bay -- #2294

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Depoe Bay to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Depoe Bay.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Depoe Bay

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	14.69%	14.69%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	(0.07%)	(0.07%)	(0.07%)	(0.07%)	(0.07%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**25.17%**	**25.17%**	**31.14%**	**18.97%**	**23.70%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**25.66%**	**25.66%**	**31.63%**	**19.39%**	**24.12%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Depoe Bay

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$1,468,885	$1,250,582
Allocated pre-SLGRP pooled liability/(surplus)	(103,079)	(107,340)
Transition liability/(surplus)	(4,238)	(4,392)
Allocated pooled OPSRP UAL	117,301	92,830
Side account	0	0
Net unfunded pension actuarial accrued liability	1,478,869	1,231,680
Combined valuation payroll	681,341	652,981
Net pension UAL as a percentage of payroll	217%	189%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	(0.07%)	(0.07%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($93)	$3,171
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

($ in millions)	Actuarial Valuation as of December 31, 2016	December 31, 2015
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$164,618	$28,775	17.55%	$161,848	$28,404
Tier 2 General Service	12.54%	213,086	26,721	12.26%	195,660	23,988
Total General Service		**377,704**	**55,496**		**357,508**	**52,392**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$377,704**	**$55,496**		**$357,508**	**$52,392**
Employer normal cost rate						
General Service			**14.69%**			**14.65%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**14.69%**			**14.65%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($4,392)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(0.07%)
B. Actual employer payroll	318,558
C. Payment to transition liability/(surplus)	(223)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(0.07%)
B. Actual employer payroll	323,819
C. Payment to transition liability/(surplus)	(227)
4. Supplemental payment to transition liability	0
5. Interest	(296)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($4,238)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(4,238)	(4,392)
2. Combined valuation payroll	681,341	652,981
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(0.07%)**	**(0.07%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	681,341	652,981
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Drain/2131
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
City of Drain/2131

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, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Drain -- #2131

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Drain to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Drain.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Drain

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	17.48%	17.48%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
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%
Net pension contribution rate	**28.03%**	**28.03%**	**31.21%**	**19.04%**	**23.77%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**28.52%**	**28.52%**	**31.70%**	**19.46%**	**24.19%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Drain

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$1,115,442	$1,152,544
Allocated pre-SLGRP pooled liability/(surplus)	(78,276)	(98,925)
Transition liability/(surplus)	0	0
Allocated pooled OPSRP UAL	89,076	85,553
Side account	0	0
Net unfunded pension actuarial accrued liability	1,126,242	1,139,172
Combined valuation payroll	517,397	601,791
Net pension UAL as a percentage of payroll	218%	189%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	0.00%	0.00%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($70)	$2,922
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

1 *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions)	Actuarial Valuation as of	
RHIA	**December 31, 2016**	**December 31, 2015**
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions)	Actuarial Valuation as of	
RHIPA	**December 31, 2016**	**December 31, 2015**
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$81,099	$14,176	17.55%	$123,141	$21,611
Tier 2 General Service	12.54%	0	0	12.26%	179,146	21,963
Total General Service		**81,099**	**14,176**		**302,287**	**43,574**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$81,099**	**$14,176**		**$302,287**	**$43,574**
Employer normal cost rate						
General Service			**17.48%**			**14.41%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**17.48%**			**14.41%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	$0
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	0.00%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	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, 2016	
(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, 2016	December 31, 2015
1. Total transition liability/(surplus)	0	0
2. Combined valuation payroll	517,397	601,791
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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	517,397	601,791
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members’ regular account balances. 7.20% compounded annually on members’ variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Dundee/2245
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
City of Dundee/2245

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, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Dundee -- #2245

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Dundee to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Dundee.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Dundee

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	15.94%	14.50%	22.14%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate[2]	(3.00%)	(3.00%)	(3.00%)	(3.00%)	(3.00%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**25.17%**	**23.73%**	**31.37%**	**17.72%**	**22.45%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**25.66%**	**24.22%**	**31.86%**	**18.14%**	**22.87%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Dundee

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$1,297,631	$1,120,725
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(162,250)	(170,749)
Allocated pooled OPSRP UAL	103,625	83,191
Side account	0	0
Net unfunded pension actuarial accrued liability	1,239,006	1,033,167
Combined valuation payroll	601,905	585,177
Net pension UAL as a percentage of payroll	206%	177%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(3.00%)	(3.07%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($82)	$2,841
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$116,816	$20,419	17.55%	$115,439	$20,260
Tier 2 General Service	12.54%	178,113	22,335	12.26%	175,526	21,519
Total General Service		**294,929**	**42,754**		**290,965**	**41,779**
Tier 1 Police & Fire	22.14%	68,415	15,147	21.37%	66,129	14,132
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**68,415**	**15,147**		**66,129**	**14,132**
Total		**$363,344**	**$57,901**		**$357,094**	**$55,911**
Employer normal cost rate						
General Service			**14.50%**			**14.36%**
Police & Fire			**22.14%**			**21.37%**
Aggregate (Default)			**15.94%**			**15.66%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($170,749)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(3.60%)
B. Actual employer payroll	272,850
C. Payment to transition liability/(surplus)	(9,823)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(3.60%)
B. Actual employer payroll	277,667
C. Payment to transition liability/(surplus)	(9,996)
4. Supplemental payment to transition liability	0
5. Interest	(11,320)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($162,250)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(162,250)	(170,749)
2. Combined valuation payroll	601,905	585,177
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(3.00%)**	**(3.07%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	601,905	585,177
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Dunes City/2299
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
City of Dunes City/2299

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Dunes City -- #2299

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Dunes City to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Dunes City.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Dunes City

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	15.96%	14.84%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	57.08%	57.08%	57.08%	57.08%	57.08%
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**83.59%**	**82.47%**	**88.29%**	**76.12%**	**80.85%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**84.08%**	**82.96%**	**88.78%**	**76.54%**	**81.27%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Dunes City

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$12,543	$0
Allocated pre-SLGRP pooled liability/(surplus)	(880)	0
Transition liability/(surplus)	29,870	27,963
Allocated pooled OPSRP UAL	1,002	0
Side account	0	0
Net unfunded pension actuarial accrued liability	42,535	27,963
Combined valuation payroll	5,818	0
Net pension UAL as a percentage of payroll	731%	0%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	57.08%	0.00%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($1)	$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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$0	$0
Tier 2 General Service	12.54%	0	0	12.26%	0	0
Total General Service		**0**	**0**		**0**	**0**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$0**	**$0**		**$0**	**$0**
Employer normal cost rate						
General Service			**14.84%**			**14.81%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**15.96%**			**16.05%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	$27,963
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	6.06%
B. Actual employer payroll	0
C. Payment to transition liability/(surplus)	0
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	6.06%
B. Actual employer payroll	2,927
C. Payment to transition liability/(surplus)	177
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, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**$29,870**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	29,870	27,963
2. Combined valuation payroll	5,818	0
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**57.08%**	**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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	5,818	0
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	\$6.5 million added to OPSRP normal cost. \$37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Durham/2269
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

November 2017
City of Durham/2269

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
City of Durham/2269

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, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Durham -- #2269

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Durham to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Durham.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Durham

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	15.96%	14.84%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate[2]	(3.95%)	(3.95%)	(3.95%)	(3.95%)	(3.95%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**24.24%**	**23.12%**	**28.94%**	**16.77%**	**21.50%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**24.73%**	**23.61%**	**29.43%**	**17.19%**	**21.92%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Durham

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$204,040	$167,922
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(33,644)	(38,004)
Allocated pooled OPSRP UAL	16,294	12,465
Side account	0	0
Net unfunded pension actuarial accrued liability	186,690	142,383
Combined valuation payroll	94,644	87,679
Net pension UAL as a percentage of payroll	197%	162%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(3.95%)	(4.56%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($13)	$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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

1 *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$0	$0
Tier 2 General Service	12.54%	0	0	12.26%	0	0
Total General Service		**0**	**0**		**0**	**0**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$0**	**$0**		**$0**	**$0**
Employer normal cost rate						
General Service			**14.84%**			**14.81%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**15.96%**			**15.78%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($38,004)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(7.48%)
B. Actual employer payroll	43,199
C. Payment to transition liability/(surplus)	(3,231)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(7.48%)
B. Actual employer payroll	46,472
C. Payment to transition liability/(surplus)	(3,476)
4. Supplemental payment to transition liability	0
5. Interest	(2,347)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($33,644)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(33,644)	(38,004)
2. Combined valuation payroll	94,644	87,679
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(3.95%)**	**(4.56%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	94,644	87,679
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Echo/2225
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
City of Echo/2225

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Echo -- #2225

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Echo to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Echo.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Echo

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	16.95%	16.95%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	6.06%	6.06%	6.06%	6.06%	6.06%
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**33.56%**	**33.56%**	**37.27%**	**25.10%**	**29.83%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**34.05%**	**34.05%**	**37.76%**	**25.52%**	**30.25%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Echo

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$462,909	$399,032
Allocated pre-SLGRP pooled liability/(surplus)	(32,485)	(34,250)
Transition liability/(surplus)	117,081	121,832
Allocated pooled OPSRP UAL	36,967	29,620
Side account	0	0
Net unfunded pension actuarial accrued liability	584,472	516,234
Combined valuation payroll	214,720	208,351
Net pension UAL as a percentage of payroll	272%	248%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	6.06%	6.15%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($29)	$1,012
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions)	Actuarial Valuation as of	
RHIA	**December 31, 2016**	**December 31, 2015**
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions)	Actuarial Valuation as of	
RHIPA	**December 31, 2016**	**December 31, 2015**
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$129,401	$22,619	17.55%	$127,639	$22,401
Tier 2 General Service	12.54%	15,573	1,953	12.26%	14,816	1,816
Total General Service		**144,974**	**24,572**		**142,455**	**24,217**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$144,974**	**$24,572**		**$142,455**	**$24,217**
Employer normal cost rate						
General Service			**16.95%**			**17.00%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**16.95%**			**17.00%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	$121,832
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	6.26%
B. Actual employer payroll	99,178
C. Payment to transition liability/(surplus)	6,209
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	6.26%
B. Actual employer payroll	107,188
C. Payment to transition liability/(surplus)	6,710
4. Supplemental payment to transition liability	0
5. Interest	8,168
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**$117,081**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	117,081	121,832
2. Combined valuation payroll	214,720	208,351
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**6.06%**	**6.15%**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	214,720	208,351
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Elgin/2205
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
City of Elgin/2205

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, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Elgin -- #2205

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Elgin to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Elgin.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Elgin

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	12.54%	12.54%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	(26.55%)	(26.55%)	(26.55%)	(26.55%)	(26.55%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**0.00%**	**0.00%**	**4.66%**	**0.00%**	**0.00%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**0.49%**	**0.49%**	**5.15%**	**0.42%**	**0.42%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Elgin

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$973,069	$666,122
Allocated pre-SLGRP pooled liability/(surplus)	(68,285)	(57,175)
Transition liability/(surplus)	(1,077,986)	(1,058,713)
Allocated pooled OPSRP UAL	77,707	49,446
Side account	0	0
Net unfunded pension actuarial accrued liability	(95,495)	(400,320)
Combined valuation payroll	451,357	347,810
Net pension UAL as a percentage of payroll	(21%)	(115%)
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	(26.55%)	(32.03%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($61)	$1,689
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of	
	December 31, 2016	December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

1 *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$34,999	$6,142
Tier 2 General Service	12.54%	40,454	5,073	12.26%	36,512	4,476
Total General Service		**40,454**	**5,073**		**71,511**	**10,618**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$40,454**	**$5,073**		**$71,511**	**$10,618**
Employer normal cost rate						
General Service			**12.54%**			**14.85%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**12.54%**			**14.85%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($1,058,713)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(17.13%)
B. Actual employer payroll	248,423
C. Payment to transition liability/(surplus)	(33,313)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(17.13%)
B. Actual employer payroll	200,252
C. Payment to transition liability/(surplus)	(22,622)
4. Supplemental payment to transition liability	0
5. Interest	(75,208)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($1,077,986)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(1,077,986)	(1,058,713)
2. Combined valuation payroll	451,357	347,810
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(26.55%)**	**(32.03%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	451,357	347,810
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Elkton/2305
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

Milliman

November 2017
City of Elkton/2305

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
City of Elkton/2305

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Elkton -- #2305

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Elkton to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Elkton.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Elkton

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	12.54%	12.54%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	0.08%	0.08%	0.08%	0.08%	0.08%
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**23.17%**	**23.17%**	**31.29%**	**19.12%**	**23.85%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**23.66%**	**23.66%**	**31.78%**	**19.54%**	**24.27%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Elkton

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$79,509	$70,075
Allocated pre-SLGRP pooled liability/(surplus)	(5,579)	(6,015)
Transition liability/(surplus)	259	255
Allocated pooled OPSRP UAL	6,349	5,202
Side account	0	0
Net unfunded pension actuarial accrued liability	80,538	69,517
Combined valuation payroll	36,880	36,589
Net pension UAL as a percentage of payroll	218%	190%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	0.08%	0.07%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($5)	$178
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of	
	December 31, 2016	December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$0	$0
Tier 2 General Service	12.54%	36,880	4,625	12.26%	36,589	4,486
Total General Service		**36,880**	**4,625**		**36,589**	**4,486**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$36,880**	**$4,625**		**$36,589**	**$4,486**
Employer normal cost rate						
General Service			**12.54%**			**12.26%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**12.54%**			**12.26%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	$255
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	0.04%
B. Actual employer payroll	18,125
C. Payment to transition liability/(surplus)	7
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	0.04%
B. Actual employer payroll	17,470
C. Payment to transition liability/(surplus)	7
4. Supplemental payment to transition liability	0
5. Interest	18
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**$259**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	259	255
2. Combined valuation payroll	36,880	36,589
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**0.08%**	**0.07%**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	36,880	36,589
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Enterprise/2180
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

Milliman

November 2017
City of Enterprise/2180

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
City of Enterprise/2180

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, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Enterprise -- #2180

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Enterprise to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Enterprise.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Enterprise

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	14.67%	14.67%	19.71%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate[2]	(0.07%)	(0.07%)	(0.07%)	(0.07%)	(0.07%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**26.83%**	**26.83%**	**31.87%**	**20.65%**	**25.38%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**27.32%**	**27.32%**	**32.36%**	**21.07%**	**25.80%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Enterprise

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$1,490,347	$1,254,926
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(4,286)	(4,352)
Allocated pooled OPSRP UAL	119,015	93,153
Side account	0	0
Net unfunded pension actuarial accrued liability	1,605,076	1,343,727
Combined valuation payroll	691,296	655,249
Net pension UAL as a percentage of payroll	232%	205%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(0.07%)	(0.07%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($94)	$3,182
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of	
	December 31, 2016	December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$144,611	$25,278	17.55%	$147,313	$25,853
Tier 2 General Service	12.54%	191,197	23,976	12.26%	185,324	22,721
Total General Service		**335,808**	**49,254**		**332,637**	**48,574**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	416	82	18.95%	786	149
Total Police & Fire		**416**	**82**		**786**	**149**
Total		**$336,224**	**$49,336**		**$333,423**	**$48,723**
Employer normal cost rate						
General Service			**14.67%**			**14.60%**
Police & Fire			**19.71%**			**18.96%**
Aggregate (Default)			**14.67%**			**14.61%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($4,352)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(0.06%)
B. Actual employer payroll	305,153
C. Payment to transition liability/(surplus)	(183)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(0.06%)
B. Actual employer payroll	301,988
C. Payment to transition liability/(surplus)	(182)
4. Supplemental payment to transition liability	0
5. Interest	(299)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($4,286)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(4,286)	(4,352)
2. Combined valuation payroll	691,296	655,249
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(0.07%)**	**(0.07%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	691,296	655,249
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Estacada/2179
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
City of Estacada/2179

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Estacada -- #2179

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Estacada to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Estacada.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Estacada

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	15.24%	15.24%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
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%
Net pension contribution rate	**26.51%**	**26.51%**	**31.93%**	**19.76%**	**24.49%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**27.00%**	**27.00%**	**32.42%**	**20.18%**	**24.91%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Estacada

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$2,305,284	$1,771,068
Allocated pre-SLGRP pooled liability/(surplus)	(161,773)	(152,015)
Transition liability/(surplus)	69,559	74,818
Allocated pooled OPSRP UAL	184,094	131,466
Side account	0	0
Net unfunded pension actuarial accrued liability	2,397,164	1,825,337
Combined valuation payroll	1,069,304	924,748
Net pension UAL as a percentage of payroll	224%	197%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	0.72%	0.85%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($146)	$4,490
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$226,063	$39,516	17.55%	$241,737	$42,425
Tier 2 General Service	12.54%	187,471	23,509	12.26%	174,044	21,338
Total General Service		**413,534**	**63,025**		**415,781**	**63,763**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$413,534**	**$63,025**		**$415,781**	**$63,763**
Employer normal cost rate						
General Service			**15.24%**			**15.34%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**15.24%**			**15.34%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	$74,818
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	0.97%
B. Actual employer payroll	507,512
C. Payment to transition liability/(surplus)	4,923
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	0.97%
B. Actual employer payroll	535,006
C. Payment to transition liability/(surplus)	5,189
4. Supplemental payment to transition liability	0
5. Interest	4,853
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**$69,559**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	69,559	74,818
2. Combined valuation payroll	1,069,304	924,748
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**0.72%**	**0.85%**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	1,069,304	924,748
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Fairview/2208
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
City of Fairview/2208

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Fairview -- #2208

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Fairview to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Fairview.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Fairview

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	16.14%	14.43%	20.63%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.81%	10.81%	10.81%	10.81%	10.81%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate[2]	(3.60%)	(3.60%)	(3.60%)	(3.60%)	(3.60%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**24.91%**	**23.20%**	**29.40%**	**17.26%**	**21.99%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**25.40%**	**23.69%**	**29.89%**	**17.68%**	**22.41%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	**70% to 130%**	**Under 60% or Over 140%**
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Fairview

	Actuarial Valuation as of	
	December 31, 2016	December 31, 2015
Allocated pooled SLGRP T1/T2 UAL	$5,829,033	$5,039,162
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(875,073)	(918,560)
Allocated pooled OPSRP UAL	465,491	374,056
Side account	0	0
Net unfunded pension actuarial accrued liability	5,419,451	4,494,658
Combined valuation payroll	2,703,792	2,631,156
Net pension UAL as a percentage of payroll	200%	171%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(3.60%)	(3.67%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($368)	$12,776
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

1 *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$271,100	$47,388	17.55%	$309,583	$54,332
Tier 2 General Service	12.54%	438,384	54,973	12.26%	433,225	53,113
Total General Service		**709,484**	**102,361**		**742,808**	**107,445**
Tier 1 Police & Fire	22.14%	100,611	22,275	21.37%	174,293	37,246
Tier 2 Police & Fire	19.73%	169,163	33,376	18.95%	169,145	32,053
Total Police & Fire		**269,774**	**55,651**		**343,438**	**69,299**
Total		**$979,258**	**$158,012**		**$1,086,246**	**$176,744**
Employer normal cost rate						
General Service			**14.43%**			**14.46%**
Police & Fire			**20.63%**			**20.18%**
Aggregate (Default)			**16.14%**			**16.27%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($918,560)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(4.03%)
B. Actual employer payroll	1,262,566
C. Payment to transition liability/(surplus)	(50,881)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(4.03%)
B. Actual employer payroll	1,331,473
C. Payment to transition liability/(surplus)	(53,658)
4. Supplemental payment to transition liability	0
5. Interest	(61,052)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($875,073)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(875,073)	(918,560)
2. Combined valuation payroll	2,703,792	2,631,156
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(3.60%)**	**(3.67%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	2,703,792	2,631,156
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Falls City/2224
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

Milliman

November 2017
City of Falls City/2224

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
City of Falls City/2224

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Falls City -- #2224

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Falls City to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Falls City.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Falls City

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	15.39%	15.39%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate[2]	(5.27%)	(5.27%)	(5.27%)	(5.27%)	(5.27%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**22.35%**	**22.35%**	**27.62%**	**15.45%**	**20.18%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**22.84%**	**22.84%**	**28.11%**	**15.87%**	**20.60%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Falls City

	Actuarial Valuation as of	
	December 31, 2016	December 31, 2015
Allocated pooled SLGRP T1/T2 UAL	$337,927	$274,472
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(74,312)	(75,698)
Allocated pooled OPSRP UAL	26,986	20,374
Side account	0	0
Net unfunded pension actuarial accrued liability	290,601	219,148
Combined valuation payroll	156,747	143,313
Net pension UAL as a percentage of payroll	185%	153%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(5.27%)	(5.56%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($21)	$696
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) **RHIA**	**Actuarial Valuation as of December 31, 2016**	**Actuarial Valuation as of December 31, 2015**
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) **RHIPA**	**Actuarial Valuation as of December 31, 2016**	**Actuarial Valuation as of December 31, 2015**
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$51,933	$9,078	17.55%	$51,202	$8,986
Tier 2 General Service	12.54%	38,125	4,781	12.26%	55,149	6,761
Total General Service		**90,058**	**13,859**		**106,351**	**15,747**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$90,058**	**$13,859**		**$106,351**	**$15,747**
Employer normal cost rate						
General Service			**15.39%**			**14.81%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**15.39%**			**14.81%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($75,698)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(4.45%)
B. Actual employer payroll	69,242
C. Payment to transition liability/(surplus)	(3,081)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(4.45%)
B. Actual employer payroll	78,417
C. Payment to transition liability/(surplus)	(3,490)
4. Supplemental payment to transition liability	0
5. Interest	(5,185)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($74,312)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(74,312)	(75,698)
2. Combined valuation payroll	156,747	143,313
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(5.27%)**	**(5.56%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	156,747	143,313
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Florence/2291
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
City of Florence/2291

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Florence -- #2291

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Florence to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Florence.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Florence

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	17.35%	14.26%	21.19%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate[2]	(9.83%)	(9.83%)	(9.83%)	(9.83%)	(9.83%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**19.75%**	**16.66%**	**23.59%**	**10.89%**	**15.62%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**20.24%**	**17.15%**	**24.08%**	**11.31%**	**16.04%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Florence

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$6,635,472	$5,771,021
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(2,721,015)	(2,810,952)
Allocated pooled OPSRP UAL	529,891	428,381
Side account	0	0
Net unfunded pension actuarial accrued liability	4,444,348	3,388,450
Combined valuation payroll	3,077,858	3,013,290
Net pension UAL as a percentage of payroll	144%	112%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(9.83%)	(9.82%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($419)	$14,632
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			**December 31, 2015**		
	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	17.48%	$252,119	$44,070	17.55%	$440,352	$77,282
Tier 2 General Service	12.54%	471,575	59,136	12.26%	460,302	56,433
Total General Service		**723,694**	**103,206**		**900,654**	**133,715**
Tier 1 Police & Fire	22.14%	352,427	78,027	21.37%	343,545	73,416
Tier 2 Police & Fire	19.73%	230,505	45,479	18.95%	224,822	42,604
Total Police & Fire		**582,932**	**123,506**		**568,367**	**116,020**
Total		**$1,306,626**	**$226,712**		**$1,469,021**	**$249,735**
Employer normal cost rate						
General Service			**14.26%**			**14.85%**
Police & Fire			**21.19%**			**20.41%**
Aggregate (Default)			**17.35%**			**17.00%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($2,810,952)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(9.22%)
B. Actual employer payroll	1,541,365
C. Payment to transition liability/(surplus)	(142,114)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(9.22%)
B. Actual employer payroll	1,493,081
C. Payment to transition liability/(surplus)	(137,661)
4. Supplemental payment to transition liability	0
5. Interest	(189,838)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($2,721,015)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(2,721,015)	(2,810,952)
2. Combined valuation payroll	3,077,858	3,013,290
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(9.83%)**	**(9.82%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	3,077,858	3,013,290
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Garibaldi/2220
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

Milliman

November 2017
City of Garibaldi/2220

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
City of Garibaldi/2220

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Garibaldi -- #2220

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Garibaldi to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Garibaldi

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	14.73%	14.73%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate[2]	1.28%	1.28%	1.28%	1.28%	1.28%
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**28.24%**	**28.24%**	**34.17%**	**22.00%**	**26.73%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**28.73%**	**28.73%**	**34.66%**	**22.42%**	**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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Garibaldi

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$893,620	$836,949
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	47,615	52,010
Allocated pooled OPSRP UAL	71,362	62,126
Side account	0	0
Net unfunded pension actuarial accrued liability	1,012,597	951,085
Combined valuation payroll	414,505	437,006
Net pension UAL as a percentage of payroll	244%	218%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	1.28%	1.25%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($56)	$2,122
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of	
	December 31, 2016	December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) **RHIA**	**Actuarial Valuation as of** **December 31, 2016**	**December 31, 2015**
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) **RHIPA**	**Actuarial Valuation as of** **December 31, 2016**	**December 31, 2015**
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$68,928	$12,049	17.55%	$64,412	$11,304
Tier 2 General Service	12.54%	86,726	10,875	12.26%	127,764	15,664
Total General Service		**155,654**	**22,924**		**192,176**	**26,968**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$155,654**	**$22,924**		**$192,176**	**$26,968**
Employer normal cost rate						
General Service			**14.73%**			**14.03%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**14.73%**			**14.03%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	$52,010
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	1.92%
B. Actual employer payroll	201,404
C. Payment to transition liability/(surplus)	3,867
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	1.92%
B. Actual employer payroll	200,546
C. Payment to transition liability/(surplus)	3,850
4. Supplemental payment to transition liability	0
5. Interest	3,322
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**$47,615**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	47,615	52,010
2. Combined valuation payroll	414,505	437,006
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**1.28%**	**1.25%**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	414,505	437,006
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	\$6.5 million added to OPSRP normal cost. \$37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Gaston/2242
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

Milliman

November 2017
City of Gaston/2242

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
City of Gaston/2242

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Gaston -- #2242

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Gaston to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Gaston.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Gaston

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	15.96%	14.84%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	(232.46%)	(232.46%)	(232.46%)	(232.46%)	(232.46%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	**70% to 130%**	**Under 60% or Over 140%**
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Gaston

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$42,477	$91,843
Allocated pre-SLGRP pooled liability/(surplus)	(2,981)	(7,883)
Transition liability/(surplus)	(411,934)	(389,504)
Allocated pooled OPSRP UAL	3,392	6,817
Side account	0	0
Net unfunded pension actuarial accrued liability	(369,046)	(298,727)
Combined valuation payroll	19,703	47,955
Net pension UAL as a percentage of payroll	(1,873%)	(623%)
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	(232.46%)	(85.46%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($3)	$233
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$47,955	$8,416
Tier 2 General Service	12.54%	0	0	12.26%	0	0
Total General Service		**0**	**0**		**47,955**	**8,416**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$0**	**$0**		**$47,955**	**$8,416**
Employer normal cost rate						
General Service			**14.84%**			**17.55%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**15.96%**			**17.55%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($389,504)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(18.69%)
B. Actual employer payroll	25,829
C. Payment to transition liability/(surplus)	(4,614)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(18.69%)
B. Actual employer payroll	15,949
C. Payment to transition liability/(surplus)	(1,696)
4. Supplemental payment to transition liability	0
5. Interest	(28,740)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($411,934)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(411,934)	(389,504)
2. Combined valuation payroll	19,703	47,955
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(232.46%)**	**(85.46%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	19,703	47,955
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Gladstone/2304
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

November 2017
City of Gladstone/2304

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
City of Gladstone/2304

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

ACTUARIAL VALUATION REPORT
DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Gladstone -- #2304

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Gladstone to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Gladstone.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Gladstone

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	17.58%	15.11%	20.89%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate[2]	(5.06%)	(5.06%)	(5.06%)	(5.06%)	(5.06%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**24.75%**	**22.28%**	**28.06%**	**15.66%**	**20.39%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**25.24%**	**22.77%**	**28.55%**	**16.08%**	**20.81%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Gladstone

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$6,454,592	$5,031,819
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(1,363,657)	(1,435,610)
Allocated pooled OPSRP UAL	515,446	373,510
Side account	0	0
Net unfunded pension actuarial accrued liability	5,606,381	3,969,719
Combined valuation payroll	2,993,957	2,627,322
Net pension UAL as a percentage of payroll	187%	151%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(5.06%)	(5.75%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($408)	$12,757
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$430,046	$75,172	17.55%	$468,818	$82,278
Tier 2 General Service	12.54%	397,702	49,872	12.26%	368,166	45,137
Total General Service		**827,748**	**125,044**		**836,984**	**127,415**
Tier 1 Police & Fire	22.14%	297,439	65,853	21.37%	246,582	52,695
Tier 2 Police & Fire	19.73%	322,622	63,653	18.95%	307,343	58,241
Total Police & Fire		**620,061**	**129,506**		**553,925**	**110,936**
Total		**$1,447,809**	**$254,550**		**$1,390,909**	**$238,351**
Employer normal cost rate						
General Service			**15.11%**			**15.22%**
Police & Fire			**20.89%**			**20.03%**
Aggregate (Default)			**17.58%**			**17.14%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($1,435,610)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(5.75%)
B. Actual employer payroll	1,364,344
C. Payment to transition liability/(surplus)	(78,450)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(5.75%)
B. Actual employer payroll	1,541,597
C. Payment to transition liability/(surplus)	(88,642)
4. Supplemental payment to transition liability	0
5. Interest	(95,139)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($1,363,657)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(1,363,657)	(1,435,610)
2. Combined valuation payroll	2,993,957	2,627,322
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(5.06%)**	**(5.75%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	2,993,957	2,627,322
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Gold Hill/2274
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
City of Gold Hill/2274

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, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Gold Hill -- #2274

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Gold Hill to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Gold Hill.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Gold Hill

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	12.54%	12.54%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	(20.14%)	(20.14%)	(20.14%)	(20.14%)	(20.14%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**2.95%**	**2.95%**	**11.07%**	**0.00%**	**3.63%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**3.44%**	**3.44%**	**11.56%**	**0.42%**	**4.05%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Gold Hill

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$282,167	$387,696
Allocated pre-SLGRP pooled liability/(surplus)	(19,801)	(33,277)
Transition liability/(surplus)	(237,042)	(238,021)
Allocated pooled OPSRP UAL	22,533	28,779
Side account	0	0
Net unfunded pension actuarial accrued liability	47,857	145,177
Combined valuation payroll	130,883	202,432
Net pension UAL as a percentage of payroll	37%	72%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	(20.14%)	(12.37%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($18)	$983
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of	
	December 31, 2016	December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$0	$0
Tier 2 General Service	12.54%	105,758	13,262	12.26%	83,571	10,246
Total General Service		**105,758**	**13,262**		**83,571**	**10,246**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$105,758**	**$13,262**		**$83,571**	**$10,246**
Employer normal cost rate						
General Service			**12.54%**			**12.26%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**12.54%**			**12.26%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($238,021)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(11.28%)
B. Actual employer payroll	82,793
C. Payment to transition liability/(surplus)	(9,101)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(11.28%)
B. Actual employer payroll	75,776
C. Payment to transition liability/(surplus)	(8,416)
4. Supplemental payment to transition liability	0
5. Interest	(16,538)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($237,042)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(237,042)	(238,021)
2. Combined valuation payroll	130,883	202,432
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(20.14%)**	**(12.37%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	130,883	202,432
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

City of Grants Pass/2113
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
City of Grants Pass/2113

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

City of Grants Pass -- #2113

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for City of Grants Pass to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Grants Pass.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for City of Grants Pass

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	17.73%	14.47%	20.64%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate[2]	(1.24%)	(1.24%)	(1.24%)	(1.24%)	(1.24%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**28.72%**	**25.46%**	**31.63%**	**19.48%**	**24.21%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**29.21%**	**25.95%**	**32.12%**	**19.90%**	**24.63%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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 Grants Pass

	Actuarial Valuation as of	
	December 31, 2016	December 31, 2015
Allocated pooled SLGRP T1/T2 UAL	$30,225,570	$25,510,113
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(1,999,119)	(2,028,244)
Allocated pooled OPSRP UAL	2,413,732	1,893,608
Side account	0	0
Net unfunded pension actuarial accrued liability	30,640,183	25,375,477
Combined valuation payroll	14,020,104	13,319,890
Net pension UAL as a percentage of payroll	219%	191%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(1.24%)	(1.29%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($1,909)	$64,677
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$1,154,464	$201,800	17.55%	$1,148,914	$201,634
Tier 2 General Service	12.54%	1,799,218	225,622	12.26%	1,786,265	218,996
Total General Service		**2,953,682**	**427,422**		**2,935,179**	**420,630**
Tier 1 Police & Fire	22.14%	1,245,210	275,689	21.37%	1,349,552	288,399
Tier 2 Police & Fire	19.73%	2,057,116	405,869	18.95%	1,969,765	373,270
Total Police & Fire		**3,302,326**	**681,558**		**3,319,317**	**661,669**
Total		**$6,256,008**	**$1,108,980**		**$6,254,496**	**$1,082,299**
Employer normal cost rate						
General Service			**14.47%**			**14.33%**
Police & Fire			**20.64%**			**19.93%**
Aggregate (Default)			**17.73%**			**17.30%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($2,028,244)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(1.24%)
B. Actual employer payroll	6,725,352
C. Payment to transition liability/(surplus)	(83,394)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(1.24%)
B. Actual employer payroll	6,871,262
C. Payment to transition liability/(surplus)	(85,204)
4. Supplemental payment to transition liability	0
5. Interest	(139,473)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($1,999,119)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(1,999,119)	(2,028,244)
2. Combined valuation payroll	14,020,104	13,319,890
3. Regular amortization factor	11.494	11.826
4. **Total transition liability/(surplus) rate**	**(1.24%)**	**(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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	14,020,104	13,319,890
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members’ regular account balances. 7.20% compounded annually on members’ variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

Depoe Bay Rural Fire Protection District/2576
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

November 2017
Depoe Bay Rural Fire Protection District/2576

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
Depoe Bay Rural Fire Protection District/2576

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

Milliman

ACTUARIAL VALUATION REPORT
DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Depoe Bay Rural Fire Protection District -- #2576

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for Depoe Bay Rural Fire Protection District to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Depoe Bay 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for Depoe Bay Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	22.14%	14.84%	22.14%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	(0.46%)	(0.46%)	(0.46%)	(0.46%)	(0.46%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**32.23%**	**24.93%**	**32.23%**	**18.58%**	**23.31%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**32.72%**	**25.42%**	**32.72%**	**19.00%**	**23.73%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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.

Depoe Bay Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$1,762,987	$925,770
Allocated pre-SLGRP pooled liability/(surplus)	(123,717)	(79,461)
Transition liability/(surplus)	(34,153)	(39,116)
Allocated pooled OPSRP UAL	140,787	68,720
Side account	0	0
Net unfunded pension actuarial accrued liability	1,745,904	875,913
Combined valuation payroll	817,760	483,383
Net pension UAL as a percentage of payroll	214%	181%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	(0.46%)	(0.85%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($111)	$2,347
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions)	Actuarial Valuation as of	
RHIA	**December 31, 2016**	**December 31, 2015**
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions)	Actuarial Valuation as of	
RHIPA	**December 31, 2016**	**December 31, 2015**
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$0	$0
Tier 2 General Service	12.54%	0	0	12.26%	0	0
Total General Service		**0**	**0**		**0**	**0**
Tier 1 Police & Fire	22.14%	92,884	20,565	21.37%	85,069	18,179
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**92,884**	**20,565**		**85,069**	**18,179**
Total		**$92,884**	**$20,565**		**$85,069**	**$18,179**
Employer normal cost rate						
General Service			**14.84%**			**14.81%**
Police & Fire			**22.14%**			**21.37%**
Aggregate (Default)			**22.14%**			**21.37%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($39,116)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(1.33%)
B. Actual employer payroll	216,842
C. Payment to transition liability/(surplus)	(2,884)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(1.33%)
B. Actual employer payroll	335,525
C. Payment to transition liability/(surplus)	(4,462)
4. Supplemental payment to transition liability	0
5. Interest	(2,383)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($34,153)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(34,153)	(39,116)
2. Combined valuation payroll	817,760	483,383
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(0.46%)**	**(0.85%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	817,760	483,383
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

Deschutes County Rural Fire Protection District #2/2822
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
Deschutes County Rural Fire Protection District #2/2822

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

Milliman

ACTUARIAL VALUATION REPORT
DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Deschutes County Rural Fire Protection District #2 -- #2822

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for Deschutes County Rural Fire Protection District #2 to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Deschutes County Rural Fire Protection District #2.

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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for Deschutes County Rural Fire Protection District #2

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	12.54%	12.54%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	(0.40%)	(0.40%)	(0.40%)	(0.40%)	(0.40%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**22.69%**	**22.69%**	**30.81%**	**18.64%**	**23.37%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**23.18%**	**23.18%**	**31.30%**	**19.06%**	**23.79%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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.

Deschutes County Rural Fire Protection District #2

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$271,545	$237,348
Allocated pre-SLGRP pooled liability/(surplus)	(19,056)	(20,372)
Transition liability/(surplus)	(4,562)	(4,754)
Allocated pooled OPSRP UAL	21,685	17,618
Side account	0	0
Net unfunded pension actuarial accrued liability	269,612	229,840
Combined valuation payroll	125,956	123,929
Net pension UAL as a percentage of payroll	214%	185%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	(0.40%)	(0.40%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($17)	$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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of	
	December 31, 2016	December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$0	$0
Tier 2 General Service	12.54%	125,956	15,795	12.26%	123,929	15,194
Total General Service		**125,956**	**15,795**		**123,929**	**15,194**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$125,956**	**$15,795**		**$123,929**	**$15,194**
Employer normal cost rate						
General Service			**12.54%**			**12.26%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**12.54%**			**12.26%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($4,754)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(0.42%)
B. Actual employer payroll	60,678
C. Payment to transition liability/(surplus)	(255)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(0.42%)
B. Actual employer payroll	60,678
C. Payment to transition liability/(surplus)	(255)
4. Supplemental payment to transition liability	0
5. Interest	(318)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($4,562)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(4,562)	(4,754)
2. Combined valuation payroll	125,956	123,929
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(0.40%)**	**(0.40%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	125,956	123,929
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

Deschutes County/2027
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

November 2017
Deschutes County/2027

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
Deschutes County/2027

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Deschutes County -- #2027

November 2017

Secondary Employers

2770 Deschutes County Fair Association

CONTENTS

Executive Summary

Milliman has prepared this report for Deschutes County to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Deschutes 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for Deschutes County

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	16.46%	14.51%	20.59%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate[2]	(4.84%)	(4.84%)	(4.84%)	(4.84%)	(4.84%)
Side account rate relief [2]	(0.98%)	(0.98%)	(0.98%)	(0.98%)	(0.98%)
Net pension contribution rate	**22.87%**	**20.92%**	**27.00%**	**14.90%**	**19.63%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**23.36%**	**21.41%**	**27.49%**	**15.32%**	**20.05%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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.

Deschutes County

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$135,812,073	$114,378,363
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(27,432,841)	(28,678,693)
Allocated pooled OPSRP UAL	10,845,583	8,490,272
Side account	5,524,979	5,771,216
Net unfunded pension actuarial accrued liability	113,699,836	88,418,726
Combined valuation payroll	62,996,310	59,721,696
Net pension UAL as a percentage of payroll	180%	148%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(4.84%)	(5.05%)
Side account rate relief	(0.98%)	(1.02%)
Allocated pooled RHIA UAL	($8,578)	$289,988
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			**December 31, 2015**		
	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	17.48%	$7,215,405	$1,261,253	17.55%	$7,625,949	$1,338,354
Tier 2 General Service	12.54%	10,841,908	1,359,575	12.26%	11,167,915	1,369,186
Total General Service		**18,057,313**	**2,620,828**		**18,793,864**	**2,707,540**
Tier 1 Police & Fire	22.14%	3,039,151	672,868	21.37%	3,627,060	775,103
Tier 2 Police & Fire	19.73%	5,483,249	1,081,845	18.95%	5,741,743	1,088,060
Total Police & Fire		**8,522,400**	**1,754,713**		**9,368,803**	**1,863,163**
Total		**$26,579,713**	**$4,375,541**		**$28,162,667**	**$4,570,703**
Employer normal cost rate						
General Service			**14.51%**			**14.41%**
Police & Fire			**20.59%**			**19.89%**
Aggregate (Default)			**16.46%**			**16.23%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($28,678,693)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(5.16%)
B. Actual employer payroll	30,200,661
C. Payment to transition liability/(surplus)	(1,558,354)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(5.16%)
B. Actual employer payroll	31,035,194
C. Payment to transition liability/(surplus)	(1,601,417)
4. Supplemental payment to transition liability	0
5. Interest	(1,913,919)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($27,432,841)**

[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, 2016	**December 31, 2015**
1. Total transition liability/(surplus)	(27,432,841)	(28,678,693)
2. Combined valuation payroll	62,996,310	59,721,696
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(4.84%)**	**(5.05%)**

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, 2015	**N/A**	**$5,771,216**	**$5,771,216**
2. Deposits during 2016		N/A	
3. Administrative expenses		(1,000)	(1,000)
4. Amount transferred to employer reserves during 2016		(638,954)	(638,954)
5. Side account earnings during 2016		393,717	393,717
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***		**$5,524,979**	**$5,524,979**

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
Side Account 1	$5,524,979	$5,771,216
Side Account 2	0	0
Side Account 3	0	0
Total	**$5,524,979**	**$5,771,216**

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, 2016	December 31, 2015
1. Total side account	$5,524,979	$5,771,216
2. Combined valuation payroll	62,996,310	59,721,696
3. Average amortization factor	8.994	9.504
4. Total side account rate (-1. ÷ 2. ÷ 3.)[1]	(0.98%)	(1.02%)

[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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

Dexter Rural Fire Protection District/2642
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

November 2017
Dexter Rural Fire Protection District/2642

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
Dexter Rural Fire Protection District/2642

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

Milliman

ACTUARIAL VALUATION REPORT
DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Dexter Rural Fire Protection District -- #2642

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for Dexter Rural Fire Protection District to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Dexter 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for Dexter Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	15.96%	14.84%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	(5.25%)	(5.25%)	(5.25%)	(5.25%)	(5.25%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**21.26%**	**20.14%**	**25.96%**	**13.79%**	**18.52%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**21.75%**	**20.63%**	**26.45%**	**14.21%**	**18.94%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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.

Dexter Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$89,454	$85,938
Allocated pre-SLGRP pooled liability/(surplus)	(6,277)	(7,376)
Transition liability/(surplus)	(19,575)	(19,375)
Allocated pooled OPSRP UAL	7,144	6,379
Side account	0	0
Net unfunded pension actuarial accrued liability	70,746	65,566
Combined valuation payroll	41,493	44,872
Net pension UAL as a percentage of payroll	171%	146%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	(5.25%)	(4.54%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($6)	$218
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

1 *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$0	$0
Tier 2 General Service	12.54%	0	0	12.26%	0	0
Total General Service		**0**	**0**		**0**	**0**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$0**	**$0**		**$0**	**$0**
Employer normal cost rate						
General Service			**14.84%**			**14.81%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**15.96%**			**15.78%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($19,375)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(3.02%)
B. Actual employer payroll	19,562
C. Payment to transition liability/(surplus)	(591)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(3.02%)
B. Actual employer payroll	19,054
C. Payment to transition liability/(surplus)	(575)
4. Supplemental payment to transition liability	0
5. Interest	(1,366)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($19,575)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(19,575)	(19,375)
2. Combined valuation payroll	41,493	44,872
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(5.25%)**	**(4.54%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	41,493	44,872
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

East Umatilla County Rural Fire Protection District/2851
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

Milliman

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
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	Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary	Principal and Consulting Actuary

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

East Umatilla County Rural Fire Protection District -- #2851

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for East Umatilla County Rural Fire Protection District to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for East Umatilla County Rural Fire Protection District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	20.43%	14.84%	20.43%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	(8.27%)	(8.27%)	(8.27%)	(8.27%)	(8.27%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**22.71%**	**17.12%**	**22.71%**	**10.77%**	**15.50%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**23.20%**	**17.61%**	**23.20%**	**11.19%**	**15.92%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$69,130	$131,110
Allocated pre-SLGRP pooled liability/(surplus)	(4,851)	(11,253)
Transition liability/(surplus)	(23,859)	(25,009)
Allocated pooled OPSRP UAL	5,521	9,732
Side account	0	0
Net unfunded pension actuarial accrued liability	45,941	104,580
Combined valuation payroll	32,066	68,458
Net pension UAL as a percentage of payroll	143%	153%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	(8.27%)	(3.84%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($4)	$332
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of	
	December 31, 2016	December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$0	$0
Tier 2 General Service	12.54%	0	0	12.26%	0	0
Total General Service		**0**	**0**		**0**	**0**
Tier 1 Police & Fire	22.14%	9,358	2,072	21.37%	0	0
Tier 2 Police & Fire	19.73%	22,708	4,480	18.95%	68,458	12,973
Total Police & Fire		**32,066**	**6,552**		**68,458**	**12,973**
Total		**$32,066**	**$6,552**		**$68,458**	**$12,973**
Employer normal cost rate						
General Service			**14.84%**			**14.81%**
Police & Fire			**20.43%**			**18.95%**
Aggregate (Default)			**20.43%**			**18.95%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($25,009)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(3.86%)
B. Actual employer payroll	39,280
C. Payment to transition liability/(surplus)	(1,516)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(3.86%)
B. Actual employer payroll	33,660
C. Payment to transition liability/(surplus)	(1,299)
4. Supplemental payment to transition liability	0
5. Interest	(1,665)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($23,859)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(23,859)	(25,009)
2. Combined valuation payroll	32,066	68,458
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(8.27%)**	**(3.84%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	32,066	68,458
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

Eisenschmidt Pool/2784
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
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, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Eisenschmidt Pool -- #2784

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for Eisenschmidt Pool to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for Eisenschmidt Pool

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	12.54%	12.54%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate[2]	(4.37%)	(4.37%)	(4.37%)	(4.37%)	(4.37%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**20.40%**	**20.40%**	**28.52%**	**16.35%**	**21.08%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**20.89%**	**20.89%**	**29.01%**	**16.77%**	**21.50%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$403,071	$393,930
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(73,458)	(74,844)
Allocated pooled OPSRP UAL	32,188	29,241
Side account	0	0
Net unfunded pension actuarial accrued liability	361,801	348,327
Combined valuation payroll	186,964	205,687
Net pension UAL as a percentage of payroll	194%	169%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(4.37%)	(3.83%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($25)	$999
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$0	$0
Tier 2 General Service	12.54%	124,049	15,556	12.26%	122,578	15,028
Total General Service		**124,049**	**15,556**		**122,578**	**15,028**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$124,049**	**$15,556**		**$122,578**	**$15,028**
Employer normal cost rate						
General Service			**12.54%**			**12.26%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**12.54%**			**12.26%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($74,844)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(3.53%)
B. Actual employer payroll	94,081
C. Payment to transition liability/(surplus)	(3,321)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(3.53%)
B. Actual employer payroll	90,366
C. Payment to transition liability/(surplus)	(3,190)
4. Supplemental payment to transition liability	0
5. Interest	(5,125)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($73,458)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(73,458)	(74,844)
2. Combined valuation payroll	186,964	205,687
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(4.37%)**	**(3.83%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	186,964	205,687
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

Estacada Fire Department/2557
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
Estacada Fire Department/2557

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, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Estacada Fire Department -- #2557

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for Estacada Fire Department to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Estacada 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for Estacada Fire Department

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	22.14%	14.84%	22.14%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	(13.61%)	(13.61%)	(13.61%)	(13.61%)	(13.61%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**19.08%**	**11.78%**	**19.08%**	**5.43%**	**10.16%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**19.57%**	**12.27%**	**19.57%**	**5.85%**	**10.58%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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.

Estacada Fire Department

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$2,426,862	$1,947,083
Allocated pre-SLGRP pooled liability/(surplus)	(170,304)	(167,123)
Transition liability/(surplus)	(1,377,785)	(1,438,982)
Allocated pooled OPSRP UAL	193,803	144,531
Side account	0	0
Net unfunded pension actuarial accrued liability	1,072,576	485,509
Combined valuation payroll	1,125,698	1,016,653
Net pension UAL as a percentage of payroll	95%	48%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	(13.61%)	(14.89%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($153)	$4,937
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of	
	December 31, 2016	December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions)	Actuarial Valuation as of	
RHIA	**December 31, 2016**	**December 31, 2015**
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions)	Actuarial Valuation as of	
RHIPA	**December 31, 2016**	**December 31, 2015**
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$0	$0
Tier 2 General Service	12.54%	0	0	12.26%	0	0
Total General Service		**0**	**0**		**0**	**0**
Tier 1 Police & Fire	22.14%	232,141	51,396	21.37%	210,970	45,084
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**232,141**	**51,396**		**210,970**	**45,084**
Total		**$232,141**	**$51,396**		**$210,970**	**$45,084**
Employer normal cost rate						
General Service			**14.84%**			**14.81%**
Police & Fire			**22.14%**			**21.37%**
Aggregate (Default)			**22.14%**			**21.37%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($1,438,982)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(15.50%)
B. Actual employer payroll	514,310
C. Payment to transition liability/(surplus)	(75,485)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(15.50%)
B. Actual employer payroll	558,543
C. Payment to transition liability/(surplus)	(81,837)
4. Supplemental payment to transition liability	0
5. Interest	(96,125)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($1,377,785)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(1,377,785)	(1,438,982)
2. Combined valuation payroll	1,125,698	1,016,653
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(13.61%)**	**(14.89%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	1,125,698	1,016,653
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	\$6.5 million added to OPSRP normal cost. \$37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

Fairview Water District/2798
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Fairview Water District -- #2798

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for Fairview Water District to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for Fairview Water District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	15.96%	14.84%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	(2.87%)	(2.87%)	(2.87%)	(2.87%)	(2.87%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**23.64%**	**22.52%**	**28.34%**	**16.17%**	**20.90%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**24.13%**	**23.01%**	**28.83%**	**16.59%**	**21.32%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$119,677	$103,508
Allocated pre-SLGRP pooled liability/(surplus)	(8,398)	(8,884)
Transition liability/(surplus)	(14,327)	(13,898)
Allocated pooled OPSRP UAL	9,557	7,683
Side account	0	0
Net unfunded pension actuarial accrued liability	106,509	88,409
Combined valuation payroll	55,512	54,046
Net pension UAL as a percentage of payroll	192%	164%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	(2.87%)	(2.71%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($8)	$262
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$4,656	$817
Tier 2 General Service	12.54%	0	0	12.26%	0	0
Total General Service		**0**	**0**		**4,656**	**817**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$0**	**$0**		**$4,656**	**$817**
Employer normal cost rate						
General Service			**14.84%**			**17.55%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**15.96%**			**17.55%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($13,898)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(0.88%)
B. Actual employer payroll	36,004
C. Payment to transition liability/(surplus)	(317)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(0.88%)
B. Actual employer payroll	28,875
C. Payment to transition liability/(surplus)	(254)
4. Supplemental payment to transition liability	0
5. Interest	(1,000)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($14,327)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(14,327)	(13,898)
2. Combined valuation payroll	55,512	54,046
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(2.87%)**	**(2.71%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	55,512	54,046
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

Farmers Irrigation District/2789
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

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November 2017
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,

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

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Farmers Irrigation District -- #2789

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for Farmers Irrigation District to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for Farmers Irrigation District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	15.98%	15.98%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate[2]	(13.01%)	(13.01%)	(13.01%)	(13.01%)	(13.01%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**15.20%**	**15.20%**	**19.88%**	**7.71%**	**12.44%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**15.69%**	**15.69%**	**20.37%**	**8.13%**	**12.86%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	**70% to 130%**	**Under 60% or Over 140%**
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$1,102,305	$778,791
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(598,207)	(604,492)
Allocated pooled OPSRP UAL	88,027	57,809
Side account	0	0
Net unfunded pension actuarial accrued liability	592,125	232,108
Combined valuation payroll	511,303	406,639
Net pension UAL as a percentage of payroll	116%	57%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(13.01%)	(15.64%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($70)	$1,974
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of	
	December 31, 2016	December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			**December 31, 2015**		
	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	17.48%	$132,660	$23,189	17.55%	$133,726	$23,469
Tier 2 General Service	12.54%	57,723	7,238	12.26%	56,011	6,867
Total General Service		**190,383**	**30,427**		**189,737**	**30,336**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$190,383**	**$30,427**		**$189,737**	**$30,336**
Employer normal cost rate						
General Service			**15.98%**			**15.99%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**15.98%**			**15.99%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($604,492)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(9.90%)
B. Actual employer payroll	237,036
C. Payment to transition liability/(surplus)	(23,467)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(9.90%)
B. Actual employer payroll	248,016
C. Payment to transition liability/(surplus)	(24,553)
4. Supplemental payment to transition liability	0
5. Interest	(41,735)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($598,207)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(598,207)	(604,492)
2. Combined valuation payroll	511,303	406,639
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(13.01%)**	**(15.64%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	511,303	406,639
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

Gilliam County/2022
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
Gilliam County/2022

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Gilliam County -- #2022

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for Gilliam County to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Gilliam 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for Gilliam County

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	15.72%	14.39%	20.23%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	(0.83%)	(0.83%)	(0.83%)	(0.83%)	(0.83%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**25.44%**	**24.11%**	**29.95%**	**18.21%**	**22.94%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**25.93%**	**24.60%**	**30.44%**	**18.63%**	**23.36%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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.

Gilliam County

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$4,381,395	$3,923,733
Allocated pre-SLGRP pooled liability/(surplus)	(307,463)	(336,783)
Transition liability/(surplus)	(151,831)	(156,567)
Allocated pooled OPSRP UAL	349,886	291,258
Side account	0	0
Net unfunded pension actuarial accrued liability	4,271,987	3,721,641
Combined valuation payroll	2,032,306	2,048,744
Net pension UAL as a percentage of payroll	210%	182%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	(0.83%)	(0.80%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($277)	$9,948
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$347,444	$60,733	17.55%	$367,063	$64,420
Tier 2 General Service	12.54%	578,882	72,592	12.26%	573,736	70,340
Total General Service		**926,326**	**133,325**		**940,799**	**134,760**
Tier 1 Police & Fire	22.14%	56,795	12,574	21.37%	58,338	12,467
Tier 2 Police & Fire	19.73%	214,968	42,413	18.95%	199,081	37,726
Total Police & Fire		**271,763**	**54,987**		**257,419**	**50,193**
Total		**$1,198,089**	**$188,312**		**$1,198,218**	**$184,953**
Employer normal cost rate						
General Service			**14.39%**			**14.32%**
Police & Fire			**20.23%**			**19.50%**
Aggregate (Default)			**15.72%**			**15.44%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($156,567)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(0.78%)
B. Actual employer payroll	973,662
C. Payment to transition liability/(surplus)	(7,595)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(0.78%)
B. Actual employer payroll	991,629
C. Payment to transition liability/(surplus)	(7,734)
4. Supplemental payment to transition liability	0
5. Interest	(10,593)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($151,831)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(151,831)	(156,567)
2. Combined valuation payroll	2,032,306	2,048,744
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(0.83%)**	**(0.80%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	2,032,306	2,048,744
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

Glide Fire Department/2824
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
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, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Glide Fire Department -- #2824

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for Glide Fire Department to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for Glide Fire Department

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	22.14%	14.84%	22.14%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate[2]	(3.90%)	(3.90%)	(3.90%)	(3.90%)	(3.90%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**30.47%**	**23.17%**	**30.47%**	**16.82%**	**21.55%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**30.96%**	**23.66%**	**30.96%**	**17.24%**	**21.97%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$144,722	$124,474
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(23,533)	(25,203)
Allocated pooled OPSRP UAL	11,557	9,240
Side account	0	0
Net unfunded pension actuarial accrued liability	132,746	108,511
Combined valuation payroll	67,129	64,993
Net pension UAL as a percentage of payroll	198%	167%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(3.90%)	(4.08%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($9)	$316
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

1 *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$0	$0
Tier 2 General Service	12.54%	0	0	12.26%	0	0
Total General Service		**0**	**0**		**0**	**0**
Tier 1 Police & Fire	22.14%	11,402	2,524	21.37%	12,971	2,772
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**11,402**	**2,524**		**12,971**	**2,772**
Total		**$11,402**	**$2,524**		**$12,971**	**$2,772**
Employer normal cost rate						
General Service			**14.84%**			**14.81%**
Police & Fire			**22.14%**			**21.37%**
Aggregate (Default)			**22.14%**			**21.37%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($25,203)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate [1]	(5.20%)
B. Actual employer payroll	31,016
C. Payment to transition liability/(surplus)	(1,613)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate [1]	(5.20%)
B. Actual employer payroll	32,681
C. Payment to transition liability/(surplus)	(1,699)
4. Supplemental payment to transition liability	0
5. Interest	(1,642)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($23,533)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(23,533)	(25,203)
2. Combined valuation payroll	67,129	64,993
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(3.90%)**	**(4.08%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	67,129	64,993
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

Goshen Fire District/2573
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

Milliman

November 2017
Goshen Fire District/2573

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
Goshen Fire District/2573

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Goshen Fire District -- #2573

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for Goshen Fire District to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Goshen 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for Goshen Fire District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	15.96%	14.84%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate[2]	39.57%	39.57%	39.57%	39.57%	39.57%
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**67.76%**	**66.64%**	**72.46%**	**60.29%**	**65.02%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**68.25%**	**67.13%**	**72.95%**	**60.71%**	**65.44%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	**70% to 130%**	**Under 60% or Over 140%**
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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.

Goshen Fire District

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$121,938	$188,378
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	201,272	190,932
Allocated pooled OPSRP UAL	9,738	13,983
Side account	0	0
Net unfunded pension actuarial accrued liability	332,948	393,293
Combined valuation payroll	56,561	98,360
Net pension UAL as a percentage of payroll	589%	400%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	39.57%	20.42%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($8)	$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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$0	$0	17.55%	$0	$0
Tier 2 General Service	12.54%	0	0	12.26%	0	0
Total General Service		**0**	**0**		**0**	**0**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$0**	**$0**		**$0**	**$0**
Employer normal cost rate						
General Service			**14.84%**			**14.81%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**15.96%**			**15.78%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	$190,932
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	16.54%
B. Actual employer payroll	11,124
C. Payment to transition liability/(surplus)	1,840
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	16.54%
B. Actual employer payroll	11,258
C. Payment to transition liability/(surplus)	1,862
4. Supplemental payment to transition liability	0
5. Interest	14,042
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**$201,272**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	201,272	190,932
2. Combined valuation payroll	56,561	98,360
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**39.57%**	**20.42%**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	56,561	98,360
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

Grant County/2012
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
Grant County/2012

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

Milliman

ACTUARIAL VALUATION REPORT
DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Grant County -- #2012

November 2017

Secondary Employers

2735 Grant County Extension and 4-H Service District

CONTENTS

Executive Summary

Milliman has prepared this report for Grant County to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Grant 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for Grant County

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	16.08%	14.47%	20.31%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	(17.26%)	(17.26%)	(17.26%)	(17.26%)	(17.26%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**9.37%**	**7.76%**	**13.60%**	**1.78%**	**6.51%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**9.86%**	**8.25%**	**14.09%**	**2.20%**	**6.93%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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.

Grant County

	Actuarial Valuation as of	
	December 31, 2016	December 31, 2015
Allocated pooled SLGRP T1/T2 UAL	$7,282,465	$6,443,530
Allocated pre-SLGRP pooled liability/(surplus)	(511,045)	(553,063)
Transition liability/(surplus)	(5,243,101)	(5,330,179)
Allocated pooled OPSRP UAL	581,558	478,301
Side account	0	0
Net unfunded pension actuarial accrued liability	2,109,877	1,038,589
Combined valuation payroll	3,377,965	3,364,435
Net pension UAL as a percentage of payroll	62%	31%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	(17.26%)	(16.67%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($460)	$16,337
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$315,291	$55,113	17.55%	$616,798	$108,248
Tier 2 General Service	12.54%	492,703	61,785	12.26%	480,287	58,883
Total General Service		**807,994**	**116,898**		**1,097,085**	**167,131**
Tier 1 Police & Fire	22.14%	74,252	16,439	21.37%	73,384	15,682
Tier 2 Police & Fire	19.73%	233,882	46,145	18.95%	221,040	41,887
Total Police & Fire		**308,134**	**62,584**		**294,424**	**57,569**
Total		**$1,116,128**	**$179,482**		**$1,391,509**	**$224,700**
Employer normal cost rate						
General Service			**14.47%**			**15.23%**
Police & Fire			**20.31%**			**19.55%**
Aggregate (Default)			**16.08%**			**16.15%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($5,330,179)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(16.54%)
B. Actual employer payroll	1,661,669
C. Payment to transition liability/(surplus)	(228,788)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(16.54%)
B. Actual employer payroll	1,646,802
C. Payment to transition liability/(surplus)	(224,088)
4. Supplemental payment to transition liability	0
5. Interest	(365,798)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($5,243,101)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(5,243,101)	(5,330,179)
2. Combined valuation payroll	3,377,965	3,364,435
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(17.26%)**	**(16.67%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	3,377,965	3,364,435
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	\$6.5 million added to OPSRP normal cost. \$37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

Grants Pass Irrigation District/2511
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman

November 2017
Grants Pass Irrigation District/2511

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Grants Pass Irrigation District -- #2511

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for Grants Pass Irrigation District to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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 Grants Pass 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for Grants Pass Irrigation District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	17.38%	17.38%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	0.89%	0.89%	0.89%	0.89%	0.89%
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**28.82%**	**28.82%**	**32.10%**	**19.93%**	**24.66%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**29.31%**	**29.31%**	**32.59%**	**20.35%**	**25.08%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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.

Grants Pass Irrigation District

	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$1,211,364	$946,307
Allocated pre-SLGRP pooled liability/(surplus)	(85,007)	(81,224)
Transition liability/(surplus)	44,767	47,002
Allocated pooled OPSRP UAL	96,736	70,244
Side account	0	0
Net unfunded pension actuarial accrued liability	1,267,860	982,329
Combined valuation payroll	561,890	494,106
Net pension UAL as a percentage of payroll	226%	199%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	0.89%	1.00%
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($77)	$2,399
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of	
	December 31, 2016	**December 31, 2015**
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions)	Actuarial Valuation as of	
RHIA	**December 31, 2016**	**December 31, 2015**
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions)	Actuarial Valuation as of	
RHIPA	**December 31, 2016**	**December 31, 2015**
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$35,000	$6,118	17.55%	$36,440	$6,395
Tier 2 General Service	12.54%	733	92	12.26%	0	0
Total General Service		**35,733**	**6,210**		**36,440**	**6,395**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$35,733**	**$6,210**		**$36,440**	**$6,395**
Employer normal cost rate						
General Service			**17.38%**			**17.55%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**17.38%**			**17.55%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	$47,002
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	1.02%
B. Actual employer payroll	256,025
C. Payment to transition liability/(surplus)	2,611
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	1.02%
B. Actual employer payroll	269,226
C. Payment to transition liability/(surplus)	2,747
4. Supplemental payment to transition liability	0
5. Interest	3,123
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**$44,767**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	44,767	47,002
2. Combined valuation payroll	561,890	494,106
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**0.89%**	**1.00%**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	561,890	494,106
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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November 2017

Green Sanitary/2765
Oregon Public Employees Retirement System

Dear Sir or Madam:

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, 2016. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information 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, 2019 through June 30, 2021 will be calculated in the December 31, 2017 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2016. 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 Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@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,
- Information to assist you in completing GASB 45 financial reporting requirements, 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.

November 2017
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 July 2017.

Some of the actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2019 to June 2021 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

November 2017
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,

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

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

Milliman

ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE AND LOCAL GOVERNMENT RATE POOL

Green Sanitary -- #2765

November 2017

CONTENTS

Executive Summary

Milliman has prepared this report for Green Sanitary to:

- Provide summary December 31, 2016 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, 2016, on estimated employer-specific contribution rates effective July 1, 2019 through June 30, 2021,
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2016, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45.

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, 2016 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, 2016 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 2019 - 2021 Employer Rates Calculated as of December 31, 2016 for Green Sanitary

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	14.95%	14.95%	20.66%	8.49%	13.22%
Tier 1/Tier 2 UAL rate[1]	10.67%	10.67%	10.67%	10.67%	10.67%
OPSRP UAL rate	1.56%	1.56%	1.56%	1.56%	1.56%
Pre-SLGRP pooled liability rate	(1.68%)	(1.68%)	(1.68%)	(1.68%)	(1.68%)
Transition liability/(surplus) rate[2]	(1.41%)	(1.41%)	(1.41%)	(1.41%)	(1.41%)
Side account rate relief [2]	0.00%	0.00%	0.00%	0.00%	0.00%
Net pension contribution rate	**24.09%**	**24.09%**	**29.80%**	**17.63%**	**22.36%**
Retiree Healthcare					
Normal cost rate	0.07%	0.07%	0.07%	0.00%	0.00%
UAL rate	0.42%	0.42%	0.42%	0.42%	0.42%
Net retiree healthcare rate	**0.49%**	**0.49%**	**0.49%**	**0.42%**	**0.42%**
Total net employer contribution rate	**24.58%**	**24.58%**	**30.29%**	**18.05%**	**22.78%**

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.*

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

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 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, 2019, which will depend on the funded status as of December 31, 2017. 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, 2016 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.88%	21.88%
Minimum 2019-2021 Rate	17.50%	13.12%
Maximum 2019-2021 Rate	26.26%	30.64%

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, which replaced GASB 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.

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA) are cost-sharing pools under GASB 45. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 were calculated as a part of the December 31, 2015 valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
		OPSRP	
	Tier 1/Tier 2	General Service	Police & Fire
RHIA July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
RHIPA July 1, 2015 to June 30, 2017	0.00%	0.00%	0.00%
RHIA July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%
RHIPA July 1, 2017 to June 30, 2019	0.00%	0.00%	0.00%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern 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, 2016	**December 31, 2015**
Allocated pooled SLGRP T1/T2 UAL	$659,531	$591,280
Allocated pre-SLGRP pooled liability/(surplus)	(46,282)	(50,751)
Transition liability/(surplus)	(38,685)	(40,518)
Allocated pooled OPSRP UAL	52,668	43,891
Side account	0	0
Net unfunded pension actuarial accrued liability	627,232	543,902
Combined valuation payroll	305,923	308,732
Net pension UAL as a percentage of payroll	205%	176%
Pre-SLGRP pooled rate	(1.68%)	(1.73%)
Transition rate	(1.41%)	(1.38%)
Side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	($42)	$1,499
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 that 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.

Executive Summary

Principal Valuation Results (continued)

SLGRP

($ in millions)	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$406.5	$424.9
Tier 1/Tier 2 valuation payroll	2,546.7	2,691.8
Normal cost rate	15.96%	15.78%
Actuarial accrued liability	$40,351.3	$38,396.8
Actuarial asset value	28,032.6	27,682.7
Unfunded actuarial accrued liability	12,318.7	10,714.1
Funded status	69%	72%
Combined valuation payroll	$5,714.0	$5,594.3
UAL as a percentage of payroll	216%	192%
UAL rate[1]	10.67%	6.03%
State and Community College Pre-SLGRP Pooled Liability	$514.0	$539.5
LGRP Pooled Liability	(218.6)	(229.0)
Total Transition Liability	(682.3)	(748.8)
Tier 1/Tier 2 Active Members		
▪ Count	33,769	36,608
▪ Average Age	53.2	52.8
▪ Average Service	20.0	19.3
▪ Average Valuation Payroll	$75,416	$73,529
Tier 1/Tier 2 Dormant Members		
▪ Count	19,703	19,558
▪ Average Age	55.9	55.3
▪ Average Monthly Benefit	$1,334	$1,309
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	81,449	80,040
▪ Average Age	71.1	70.7
▪ Average Monthly Benefit	$2,162	$2,109

[1] *The December 31, 2016 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.15% at December 31, 2015). The City of Portland pays an additional 1.11% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (1.12% and 0.15% respectively at December 31, 2015).*

Executive Summary

Principal Valuation Results (continued)

OPSRP

	Actuarial Valuation as of	
($ in millions)	**December 31, 2016**	**December 31, 2015**
General service normal cost	$402.9	$342.2
OPSRP general service valuation payroll	4,746.4	4,266.9
General service normal cost rate	8.49%	8.02%
Police and fire normal cost	$80.6	$69.9
OPSRP police and fire valuation payroll	609.4	546.4
Police and fire normal cost rate	13.22%	12.79%
Actuarial accrued liability	$4,717.0	$3,742.5
Actuarial asset value	3,021.4	2,389.1
Unfunded actuarial accrued liability	1,695.6	1,353.5
Funded status	64%	64%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	17%	14%
UAL rate	1.56%	1.27%

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

($ in millions) RHIA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$3.0	$3.3
Tier 1 / Tier 2 valuation payroll	4,516.7	4,730.8
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	$463.7	$465.6
Actuarial asset value	465.0	419.3
Unfunded actuarial accrued liability	(1.3)	46.3
Funded status	100%	90%
Combined valuation payroll	$9,872.6	$9,544.1
UAL as a percentage of payroll	0%	0%
UAL rate	0.42%	0.43%

($ in millions) RHIPA	Actuarial Valuation as of December 31, 2016	Actuarial Valuation as of December 31, 2015
Normal cost	$1.5	$1.5
Tier 1 / Tier 2 valuation payroll	1,276.0	1,339.4
Normal cost rate	0.12%	0.11%
Actuarial accrued liability	$67.9	$67.8
Actuarial asset value	19.1	11.2
Unfunded actuarial accrued liability	48.8	56.6
Funded status	28%	16%
Combined valuation payroll	$2,881.4	$2,831.8
UAL as a percentage of payroll	2%	2%
UAL rate	0.38%	0.38%

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 Employer's Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2016			December 31, 2015		
	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	17.48%	$135,437	$23,674	17.55%	$132,808	$23,308
Tier 2 General Service	12.54%	142,111	17,821	12.26%	148,747	18,236
Total General Service		**277,548**	**41,495**		**281,555**	**41,544**
Tier 1 Police & Fire	22.14%	0	0	21.37%	0	0
Tier 2 Police & Fire	19.73%	0	0	18.95%	0	0
Total Police & Fire		**0**	**0**		**0**	**0**
Total		**$277,548**	**$41,495**		**$281,555**	**$41,544**
Employer normal cost rate						
General Service			**14.95%**			**14.76%**
Police & Fire			**20.66%**			**19.94%**
Aggregate (Default)			**14.95%**			**14.76%**

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost 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, 2015	($40,518)
2. January 1, 2016 through June 30, 2016	
A. Transition liability/(surplus) rate[1]	(1.54%)
B. Actual employer payroll	145,594
C. Payment to transition liability/(surplus)	(2,242)
3. July 1, 2016 through December 31, 2016	
A. Transition liability/(surplus) rate[1]	(1.54%)
B. Actual employer payroll	148,728
C. Payment to transition liability/(surplus)	(2,290)
4. Supplemental payment to transition liability	0
5. Interest	(2,699)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2016	
(1. - 2C. - 3C. - 4. + 5. + 6.)	**($38,685)**

[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, 2016	December 31, 2015
1. Total transition liability/(surplus)	(38,685)	(40,518)
2. Combined valuation payroll	305,923	308,732
3. Regular amortization factor	8.994	9.504
4. **Total transition liability/(surplus) rate**	**(1.41%)**	**(1.38%)**

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, 2015	**N/A**		
2. Deposits during 2016		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2016			
5. Side account earnings during 2016			
6. Side account as of December 31, 2016 ***(1. + 2. + 3. + 4. + 5.)***			

Side Account Information

Side Account Balances

	December 31, 2016	December 31, 2015
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, 2016	December 31, 2015
1. Total side account	$0	$0
2. Combined valuation payroll	305,923	308,732
3. Average amortization factor	8.994	9.504
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, 2016 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:

Actuarial cost method	Entry Age Normal.
Amortization Method	The UAL is amortized as a level percentage of combined payroll. The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period. The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period. 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.
Asset valuation method	Market value of assets, excluding reserves.
Contribution rate stabilization method (rate collar)	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.

Economic Assumptions

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

Net investment return	7.20% compounded annually on system assets.
Interest crediting	7.20% compounded annually on members' regular account balances. 7.20% compounded annually on members' variable account balances.
Consumer price inflation	2.50% per year.
Future general wage inflation	3.50% per year.
Healthcare cost inflation	Ranging from 7.5% in 2017 to 4.2% in 2093.
Administrative Expenses	$6.5 million added to OPSRP normal cost. $37.5 million added to Tier 1/Tier 2 normal cost.

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2015 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Valuation Procedures

- **Allocation of Liability for Service Segments**

For allocating Tier 1/Tier 2 liability among multiple employers, the weighting between Money Match and Full Formula methodologies was updated to reflect expected future experience.

Changes in Economic Assumptions

- **Investment Return and Interest Crediting**

  The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting to both regular and variable account balances was 7.50%.

- **Administrative Expenses**

  Administrative expenses were assumed to be $6.5 million per year for the OPSRP System and $37.5 million per year for the Tier 1/Tier 2 System.

Changes in Demographic Assumptions

- **Mortality**

  Mortality assumption uses RP-2014 base tables and mortality improvement scale based on 60-year unisex average Social Security experience.

- **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, 2016 actuarial valuation is contained in the system-wide report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2015 actuarial valuation. 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.

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.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

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 methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution 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.

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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