

October 2018

State Judiciary/2099
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, 2017. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2019. Information to assist you in preparing your required financial reporting disclosures under Statement 68 and Statement 75 of the Governmental Accounting Standards Board (GASB) will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2017. The full development of the valuation results for the Retiree Health Insurance Account (RHIA) and Retiree Health Insurance Premium Account (RHIPA) programs can be found in the separate system-wide actuarial valuation report. The State Judiciary does not participate in the OPSRP or IAP Plans.

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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Detailed development of Tier 1/Tier 2 valuation results,
- 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.

October 2018
State Judiciary/2099

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.

The actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2019 to June 2021 for System employers. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals, and with our understanding of the System benefit provisions described in the appendixes of this report. Determinations for other purposes may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



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

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

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

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

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

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

Sincerely,

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

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

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

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



ACTUARIAL VALUATION REPORT DECEMBER 31, 2017

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

State Judiciary -- #2099

October 2018

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

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Executive Summary

Milliman has prepared this report for State Judiciary to:

- Provide summary December 31, 2017 valuation results for the Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results on assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the RHIA and RHIPA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific pension rates and applies the results from the system-wide valuation to State Judiciary. In the system-wide actuarial valuation report, pension valuation results for the State Judiciary are included in the Tier 1/Tier 2 valuation results for Independent Employers.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021.

Employer Rates Effective July 1, 2019 for State Judiciary

Pension

Employer normal cost rate	17.43%
UAL rate ¹	3.04%
Employer pension contribution rate	20.47%
Member pension contribution rate	7.00%
Total pension contribution rate	27.47%

Retiree Healthcare

Normal cost rate	0.18%
UAL rate	0.27%
Total retiree healthcare rate	0.45%
Total contribution rate	27.92%

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2021 to June 2023 Biennium

The rate collar limits changes in contribution rates. The table below shows the possible minimum and maximum rates first effective as of July 1, 2021, which will depend on the funded status as of December 31, 2019. If the employer's funded status is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale.

For comparison, the funded status as of December 31, 2017 is 86%.

Funded Status as of December 31, 2019	70% to 130%	Under 60% or Over 140%
2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate	20.47%	20.47%
Minimum 2021-2023 Rate	16.38%	12.29%
Maximum 2021-2023 Rate	24.56%	28.65%

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.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2012	\$204,859,267	\$207,638,427	\$2,779,160	99%	\$20,868,445	13%
12/31/2013	231,312,188	213,473,100	(17,839,088)	108%	21,431,672	(83%)
12/31/2014	232,929,898	257,229,409	24,299,511	91%	23,415,404	104%
12/31/2015	227,733,468	269,239,976	41,506,508	85%	23,602,940	176%
12/31/2016	230,602,015	285,616,344	55,014,329	81%	23,539,629	234%
12/31/2017	262,639,343	304,198,922	41,559,579	86%	23,894,906	174%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

In June 2015, the GASB issued Statement 75, which replaces GASB 45 and governs employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting the Retiree Health Insurance Account (RHIA) and Retiree Health Insurance Premium Account (RHIPA) 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.

State Judiciary

	Actuarial Valuation as of	
	December 31, 2017	December 31, 2016
Total normal cost	\$5,837,749	\$5,903,495
Valuation payroll	23,894,906	23,539,629
Total normal cost rate (includes member contributions)	24.43%	25.08%
Actuarial accrued liability	\$304,198,922	\$285,616,344
Actuarial asset value	262,639,343	230,602,015
Unfunded actuarial accrued liability	41,559,579	55,014,329
Funded status	86%	81%
Combined valuation payroll	\$23,894,906	\$23,539,629
UAL as a percentage of payroll	174%	234%
UAL rate (includes Multnomah Fire District #10)	3.04%	2.39%
Allocated pooled RHIA UAL	(273,792)	(3,205)
Allocated pooled RHIPA UAL	316,569	398,444
Active members ¹	184	189
Dormant members	11	17
Retirees and beneficiaries	252	224

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions) RHIA	Actuarial Valuation as of	
	December 31, 2017	December 31, 2016
Normal cost	\$2.5	\$3.0
Tier 1 / Tier 2 valuation payroll	4,246.9	4,516.7
Normal cost rate	0.06%	0.07%
Actuarial accrued liability	\$437.6	\$463.7
Actuarial asset value	553.3	465.0
Unfunded actuarial accrued liability	(115.7)	(1.3)
Funded status	126%	100%
Combined valuation payroll	\$10,098.9	\$9,872.6
UAL as a percentage of payroll	(1%)	0%
UAL rate	0.00%	0.42%

(\$ in millions) RHIPA	Actuarial Valuation as of	
	December 31, 2017	December 31, 2016
Normal cost	\$1.4	\$1.5
Tier 1 / Tier 2 valuation payroll	1,212.2	1,276.0
Normal cost rate	0.12%	0.12%
Actuarial accrued liability	\$69.4	\$67.9
Actuarial asset value	29.8	19.1
Unfunded actuarial accrued liability	39.5	48.8
Funded status	43%	28%
Combined valuation payroll	\$2,984.5	\$2,881.4
UAL as a percentage of payroll	1%	2%
UAL rate	0.27%	0.38%

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

Pension Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Pension Assets

	December 31, 2017	December 31, 2016
1. Member reserves	\$29,389,486	\$34,526,699
2. Employer reserves	137,320,109	116,702,396
3. Benefits in force reserve	95,929,748	79,372,921
4. Total market value of assets (1. + 2. + 3.)	\$262,639,343	\$230,602,015

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for benefits in force.

Reconciliation of Pension Assets

	December 31, 2016 to December 31, 2017
1. Market value of assets at beginning of year	\$230,602,015
2. Regular employer and member contributions	5,803,333
3. Benefit payments and expense	(17,869,360)
4. Adjustments ¹	9,961,063
5. Interest credited	34,142,292
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$262,639,343

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Pension Valuation Results

Liabilities

Normal Cost

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 plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost

	December 31, 2017	December 31, 2016
Total Normal Cost	\$5,837,749	\$5,903,495

Change in Total Normal Cost Due to Changes

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2017.

	Before Changes	After Changes	Net Change
Total Normal Cost	\$5,837,749	\$5,837,749	\$0

Pension Valuation Results

Liabilities (continued)

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

	December 31, 2017	December 31, 2016
Active Members	\$81,457,858	\$88,764,234
Dormant Members	5,451,193	9,401,082
Retired Members and Beneficiaries	217,289,871	187,451,028
Total Actuarial Accrued Liability	\$304,198,922	\$285,616,344

Change in Actuarial Accrued Liability Due to Changes

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2017.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$304,198,922	\$304,198,922	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2017	December 31, 2016
1. Actuarial accrued liability	\$304,198,922	\$285,616,344
2. Actuarial value of assets	262,639,343	230,602,015
3. Unfunded accrued liability (1. – 2.)	41,559,579	55,014,329
4. Funded percentage (2. ÷ 1.)	86%	81%
5. Combined valuation payroll	\$23,894,906	\$23,539,629
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	174%	234%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding regular Tier 1/Tier 2 UAL amounts. For subsequent odd-year valuations, amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2016	Payment	Interest	UAL December 31, 2017	Next Year's Payment
December 31, 2013	(\$17,720,855)	(\$1,404,411)	(\$1,222,003)	(\$17,538,447)	(\$1,453,543)
December 31, 2015	\$59,317,018	\$4,340,481	\$4,104,246	\$59,080,783	\$4,492,494
December 31, 2017	N/A	N/A	N/A	\$17,243	\$1,217
Total				\$41,559,579	\$3,040,168

Pension Valuation Results

Unfunded Accrued Liability (UAL) (continued)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2016	\$285,616,344
b. Total normal cost at December 31, 2016 (excluding assumed expenses)	5,585,910
c. Benefit payments during 2017	(17,731,527)
d. Interest at 7.20% to December 31, 2017	20,127,135
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	293,597,862
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2017 (e. + f.)	293,597,862
2. Actuarial accrued liability at December 31, 2017	304,198,922
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(10,601,060)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2016	230,602,015
b. Contributions for 2017 ¹	5,803,333
c. Benefit payments and expenses during 2017	(17,869,360)
d. Interest at 7.20% to December 31, 2017	16,168,968
e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)	234,704,956
5. Actuarial value of assets at December 31, 2017	262,639,343
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	27,934,387
7. Total actuarial gain/(loss) (3. + 6.)	\$17,333,327

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2016 is provided below.

1. UAL at December 31, 2016	\$55,014,329
2. Expected increase	3,878,577
3. Liability (gain)/loss	10,601,060
4. Asset (gain)/loss	(27,934,387)
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)	\$41,559,579

¹ Excludes contributions for Multnomah Fire District.

Pension Valuation Results

Contribution Rate Development

Normal Cost Rate

For State Judiciary, the total normal cost calculated previously is divided by projected payroll to determine a total normal cost rate. The member contribution rate is subtracted from the total normal cost rate to determine the employer normal cost rate. The table below shows the development of the rate.

Development of Normal Cost Rate

	December 31, 2017			December 31, 2016		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Total normal cost	\$5,837,749	\$23,894,906	24.43%	\$5,903,495	\$23,539,629	25.08%
Member contribution rate			(7.00%)			(7.00%)
Employer normal cost rate			17.43%			18.08%

Pension Valuation Results

Contribution Rate Development (continued)

Development of UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2017	December 31, 2016
1. Total UAL	\$41,559,579	\$55,014,329
2. Next year's UAL payment	3,040,168	3,883,480
3. Combined valuation payroll	23,894,906	23,539,629
4. UAL rate (2. ÷ 3)	12.72%	16.50%

Pension Valuation Results

Contribution Rate Development (continued)

Pension Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate.

	July 1, 2019 Rates calculated as of December 31, 2017	Advisory July 1, 2019 Rates calculated as of December 31, 2016
1. Employer pension contribution rates		
a. Employer Normal Cost Rate	17.43%	18.08%
b. UAL rate	12.72%	16.50%
c. Multnomah Fire District #10 rate	0.15%	0.14%
d. Total employer pension rate (a. + b. + c.)	30.30%	34.72%
2. Member pension contribution rate	7.00%	7.00%
3. Total pension contribution rate	37.30%	41.72%

Pension Valuation Results

Contribution Rate Development (continued)

Adjustments Due to Rate Collar

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the collar is increased on a graded scale.

The table below shows the current contribution rate for the period from July 1, 2017 through June 30, 2019, develops the maximum and minimum contribution rates effective July 1, 2019 based on the collar, and calculates the net adjustment due to the collar.

1. Current total pension contribution rate		24.06%
2. Current member contribution rate		7.00%
3. Current employer pension contribution rate (1. - 2.)		17.06%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		3.41%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.41%
c. Funded percentage		86%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.41%
5. July 1, 2019 minimum employer contribution rate	(3. - 4.d.)	13.65%
6. July 1, 2019 maximum employer contribution rate	(3. + 4.d.)	20.47%
7. July 1, 2019 total employer pension rate, before adjustment		30.30%
8. Net adjustment due to rate collar (5. - 7., but not < 0, or 6. - 7., but not > 0)		(9.83%)
9. July 1, 2019 pension UAL rate, before collar		12.72%
10. July 1, 2019 pension UAL rate, after collar	(8. + 9.)	2.89%
11. July 1, 2019 total employer pension rate, after collar	(7. + 8.)	20.47%

Pension Valuation Results

Contribution Rate Development (continued)

Pension Contribution Rate Summary (Post Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar.

	July 1, 2019 Rates calculated as of December 31, 2017	Advisory July 1, 2019 Rates calculated as of December 31, 2016
1. Employer pension contribution rates		
a. Employer normal cost rate	17.43%	18.08%
b. UAL rate	2.89%	2.25%
c. Multnomah FD #10 rate	0.15%	0.14%
d. Total employer pension rate <i>(a. + b. + c., minimum 0.00%)</i>	20.47%	20.47%
2. Member pension contribution rate	7.00%	7.00%
3. Total pension contribution rate	27.47%	27.47%

Data

Demographic Information

State Judiciary Member Census

	December 31, 2017	December 31, 2016
Active Members ¹	184	189
Active Members with previous service segments with the employer	1	1
Dormant Members	11	17
Retired Members and Beneficiaries	252	224
Grand Total Number of Members	448	431

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

State Judiciary Active Members as of December 31, 2017

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44	9	1	3	1						14
45-49	12	8	2	3	2					27
50-54	8	12	6	4	4	1				35
55-59	8	7	10	8	4	8				45
60-64	2	4	4	8	3	4	2	1		28
65-69	2	2	5	6	5	4	1	1		26
70-74			2	1	3	2			1	9
75+										
Total	41	34	32	31	21	19	3	2	1	184

Distribution of State Judiciary Dormant Members

Distribution of State Judiciary Retired Members and Beneficiaries

Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59	3	6,498
35-39	1	203	60-64	14	7,890
40-44			65-69	59	6,146
45-49			70-74	64	6,990
50-54	1	3,589	75-79	48	6,166
55-59	3	5,218	80-84	22	6,034
60-64	1	5,247	85-89	26	5,918
65-69	4	2,264	90-94	12	3,943
70-74			95-99	4	4,353
75+	1	7,708	100+		
Total	11	3,769	Total	252	6,299

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2017 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

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

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>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.</p>

Economic Assumptions

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

<i>Net investment return</i>	7.20% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.20% compounded annually on members' regular account balances.</p> <p>7.20% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.5% in 2018 to 4.2% in 2093.
<i>Administrative Expenses</i>	<p>\$6.5 million added to OPSRP normal cost.</p> <p>\$37.5 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2016 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2016 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2016 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2016 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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