

October 2018

Gaston Rural Fire Protection District/2608  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://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.

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.



October 2018  
Gaston Rural Fire Protection District/2608

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**

**INDEPENDENT EMPLOYERS**

**Gaston Rural Fire Protection District -- #2608**

**October 2018**

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## Executive Summary

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

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Gaston Rural Fire Protection District.

### Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

#### ***Employer Rates Effective July 1, 2019 for Gaston Rural Fire Protection District***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 16.92%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | (1.70%)       | (1.70%)         | (1.70%)       |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>16.67%</b> | <b>8.15%</b>    | <b>12.78%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>16.73%</b> | <b>8.15%</b>    | <b>12.78%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 117%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 15.22%             | 15.22%                        |
| Minimum 2021-2023 Rate                                       | 12.18%             | 9.14%                         |
| Maximum 2021-2023 Rate                                       | 18.26%             | 21.30%                        |

# 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               | \$365,393                     | \$380,080                             | \$14,687             | 96%                  | \$101,729           | 14%   |
| 12/31/2013               | 402,978                       | 416,448                               | 13,470               | 97%                  | 108,497             | 12%   |
| 12/31/2014               | 408,532                       | 484,761                               | 76,229               | 84%                  | 108,279             | 70%   |
| 12/31/2015               | 400,926                       | 502,365                               | 101,438              | 80%                  | 142,046             | 71%   |
| 12/31/2016               | 414,112                       | 506,170                               | 92,058               | 82%                  | 166,430             | 55%   |
| 12/31/2017               | 392,982                       | 336,971                               | (56,011)             | 117%                 | 179,343             | (31%)   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Gaston Rural Fire Protection District***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | (\$56,011)                | \$92,058          |
| Allocated pooled OPSRP UAL                       | 27,025                    | 28,653            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | (28,986)                  | 120,711           |
| Combined valuation payroll                       | 179,343                   | 166,430           |
| Net pension UAL as a percentage of payroll       | (16%)                     | 73%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$2,055)                 | (\$23)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$0                       | \$66              |
| Tier 1/Tier 2 valuation payroll                                  | 0                         | 395               |
| Tier 1/Tier 2 pension normal cost rate                           | 16.92%                    | 16.71%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$336,971                 | \$506,170         |
| Actuarial asset value  | 392,982                   | 414,112           |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | (56,011)                  | 92,058            |
| Tier 1/ Tier 2 Funded status                                     | 117%                      | 82%               |
| Combined valuation payroll                                       | \$179,343                 | \$166,430         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | (31%)                     | 55%               |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | (1.70%)                   | 3.58%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 0                         | 0                 |
| Tier 1/Tier 2 dormant members                                    | 1                         | 1                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 2                         | 2                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 179,343           | 166,430           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$52,856          | \$50,368          |
| 2. Employer reserves                                  | 311,279           | 265,143           |
| 3. Benefits in force reserve                          | 28,847            | 98,601            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$392,982</b>  | <b>\$414,112</b>  |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$414,112                                 |
| 2. Regular employer contributions   | 4,681                                     |
| 3. Benefit payments and expenses  | (5,374)                                   |
| 4. Adjustments <sup>1</sup>   | (72,420)                                  |
| 5. Interest credited  | 51,982                                    |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$392,982</b>                          |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$10              |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 56                |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$0</b>        | <b>\$66</b>       |

### Change in Tier 1/Tier 2 Normal Cost

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$0            | \$0           | \$0        |



## Tier 1/Tier 2 Valuation Results

### Liabilities

#### ***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.

#### ***Summary of Actuarial Accrued Liability by Tier/Member Classification***

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$193,354         | \$203,608         |
| ▪ Tier 1 General Service                 | 0                 | 0                 |
| ▪ Tier 2 Police & Fire                   | 35,005            | 31,128            |
| ▪ Tier 2 General Service                 | 41,060            | 36,655            |
| ▪ <b>Total Active Members</b>            | <b>\$269,419</b>  | <b>\$271,391</b>  |
| Dormant Members                          | 2,210             | 1,918             |
| Retired Members and Beneficiaries        | 65,342            | 232,861           |
| <b>Total Actuarial Accrued Liability</b> | <b>\$336,971</b>  | <b>\$506,170</b>  |

#### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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 | \$336,971      | \$336,971     | \$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  | \$336,971         | \$506,170         |
| 2. Actuarial value of assets  | 392,982           | 414,112           |
| 3. Unfunded accrued liability (1. – 2.)                                       | (56,011)          | 92,058            |
| 4. Funded percentage (2. ÷ 1.)  | 117%              | 82%               |
| 5. Combined valuation payroll   | \$179,343         | \$166,430         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | (31%)             | 55%               |

#### 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<br>December 31, 2016 | Payment | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|---------|----------|--------------------------|------------------------|
| December 31, 2013 | \$13,381                 | \$1,060 | \$923    | \$13,244                 | \$1,098                |
| December 31, 2015 | \$87,958                 | \$6,436 | \$6,086  | \$87,608                 | \$6,662                |
| December 31, 2017 | N/A                      | N/A     | N/A      | (\$156,863)              | (\$11,076)             |
| <b>Total</b>      |                          |         |          | <b>(\$56,011)</b>        | <b>(\$3,316)</b>       |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$506,170        |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 66               |
| c. Benefit payments during 2017  | (5,332)          |
| d. Interest at 7.20% to December 31, 2017  | 36,255           |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 537,159          |
| 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.)               | 537,159          |
| 2. Actuarial accrued liability at December 31, 2017                                  | 336,971          |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 200,188          |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 414,112          |
| b. Contributions for 2017 <sup>1</sup>   | 4,681            |
| c. Benefit payments and expenses during 2017   | (5,374)          |
| d. Interest at 7.20% to December 31, 2017  | 29,791           |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 443,211          |
| 5. Actuarial value of assets at December 31, 2017                                    | 392,982          |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | (50,229)         |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$149,959</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                   |
|---|-------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$92,058</b>   |
| 2. Expected increase  | 1,890             |
| 3. Liability (gain)/loss  | (200,188)         |
| 4. Asset (gain)/loss  | 50,229            |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                 |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>(\$56,011)</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$10              | \$52                                     | 19.23%           |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 56                | 343                                      | 16.33%           |
| Tier 2 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| <b>Total</b>           | <b>\$0</b>        | <b>\$0</b>                               | <b>16.92%</b>    | <b>\$66</b>       | <b>\$395</b>                             | <b>16.71%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | (\$56,011)        | \$92,058          |
| 2. Next year's Tier 1/Tier 2 UAL payment | (3,316)           | 6,841             |
| 3. Combined valuation payroll            | 179,343           | 166,430           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | (1.85%)           | 4.11%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 16.92%   | 16.71%  |
| b. Tier 1/Tier 2 UAL rate                             | (1.85%)  | 4.11%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 15.22%   | 20.96%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 16.91%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 16.91%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.38%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.38%   |
| c. Funded percentage   |                          | 117%    |
| 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.) |                          | 3.38%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 13.53%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 20.29%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 15.22%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%   |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | (1.85%) |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | (1.85%) |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 15.22%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 16.92%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 16.92%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 15.22%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates        |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate | 16.92%   | 16.71%  |
| b. Tier 1/Tier 2 UAL rate                          | (1.85%)  | 3.44%   |
| c. Multnomah Fire District #10 rate                | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate                | 15.22%   | 20.29%  |
| <i>(a. + b. + c., minimum of 5.94%)</i>            |  |   |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service | Police & Fire    | Total            |
|-----------------------------------|-----------------|------------------|------------------|
| Tier 1                            | \$0             | \$0              | \$0              |
| Tier 2                            | 0               | 0                | 0                |
| Tier 1/Tier 2 valuation payroll   | 0               | 0                | 0                |
| OPSRP valuation payroll           | 0               | 179,343          | 179,343          |
| <b>Combined valuation payroll</b> | <b>\$0</b>      | <b>\$179,343</b> | <b>\$179,343</b> |

### *Employer Member Census*

|  | December 31 |          |          |           |          |          |          |           |
|--|-------------|----------|----------|-----------|----------|----------|----------|-----------|
|  | 2017        |          |          |           | 2016     |          |          |           |
|  | Tier 1      | Tier 2   | OPSRP    | Total     | Tier 1   | Tier 2   | OPSRP    | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |           |          |          |          |           |
| General Service  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Police & Fire  | 0           | 0        | 4        | 4         | 0        | 0        | 4        | 4         |
| Total  | 0           | 0        | 4        | 4         | 0        | 0        | 4        | 4         |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |           |          |          |          |           |
| General Service  | 0           | 1        | N/A      | 1         | 1        | 1        | N/A      | 2         |
| Police & Fire  | 2           | 1        | N/A      | 3         | 5        | 4        | N/A      | 9         |
| Total  | 2           | 2        | N/A      | 4         | 6        | 5        | N/A      | 11        |
| <b>Dormant Members</b>   |             |          |          |           |          |          |          |           |
| General Service  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Police & Fire  | 0           | 1        | 0        | 1         | 0        | 1        | 0        | 1         |
| Total  | 0           | 1        | 0        | 1         | 0        | 1        | 0        | 1         |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |           |          |          |          |           |
| General Service  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Police & Fire  | 2           | 0        | 0        | 2         | 2        | 0        | 0        | 2         |
| Total  | 2           | 0        | 0        | 2         | 2        | 0        | 0        | 2         |
| <b>Grand Total Number of Members</b>                                   | <b>4</b>    | <b>3</b> | <b>4</b> | <b>11</b> | <b>8</b> | <b>6</b> | <b>4</b> | <b>18</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             | 1        | 235                     |
| 35-39           |          |                                  | 60-64                             |          |                         |
| 40-44           |          |                                  | 65-69                             | 1        | 166                     |
| 45-49           |          |                                  | 70-74                             |          |                         |
| 50-54           |          |                                  | 75-79                             |          |                         |
| 55-59           |          |                                  | 80-84                             |          |                         |
| 60-64           | 1        | 184                              | 85-89                             |          |                         |
| 65-69           |          |                                  | 90-94                             |          |                         |
| 70-74           |          |                                  | 95-99                             |          |                         |
| 75+             |          |                                  | 100+                              |          |                         |
| <b>Total</b>    | <b>1</b> | <b>184</b>                       | <b>Total</b>                      | <b>2</b> | <b>201</b>              |

## 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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October 2018

Halsey Shedd Rural Fire Protection District/2698  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018

Halsey Shedd Rural Fire Protection District/2698

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.



October 2018  
Halsey Shedd Rural Fire Protection District/2698

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.

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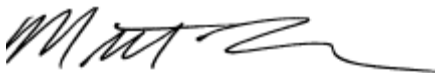
The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.


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, 2017**

## **OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM**

**INDEPENDENT EMPLOYERS**

**Halsey Shedd Rural Fire Protection District -- #2698**

**October 2018**

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# Executive Summary

Milliman has prepared this report for Halsey Shedd Rural Fire Protection District to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Halsey Shedd Rural Fire Protection District.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Halsey Shedd Rural Fire Protection District***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 14.71%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 0.27%         | 0.27%           | 0.27%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>16.43%</b> | <b>10.12%</b>   | <b>14.75%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>16.49%</b> | <b>10.12%</b>   | <b>14.75%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 68%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 14.98%             | 14.98%                        |
| Minimum 2021-2023 Rate                                       | 11.98%             | 8.98%                         |
| Maximum 2021-2023 Rate                                       | 17.98%             | 20.98%                        |

# 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               | \$613,020                     | \$480,877                             | (\$132,143)          | 127%                 | \$139,713           | (95%)   |
| 12/31/2013               | 698,072                       | 521,710                               | (176,362)            | 134%                 | 144,016             | (122%)  |
| 12/31/2014               | 742,316                       | 639,782                               | (102,534)            | 116%                 | 148,848             | (69%)   |
| 12/31/2015               | 761,391                       | 684,803                               | (76,588)             | 111%                 | 153,442             | (50%)   |
| 12/31/2016               | 809,678                       | 797,508                               | (12,170)             | 102%                 | 78,552              | (15%)   |
| 12/31/2017               | 610,401                       | 900,875                               | 290,474              | 68%                  | 135,495             | 214%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Halsey Shedd Rural Fire Protection District***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$290,474                 | (\$12,170)        |
| Allocated pooled OPSRP UAL                       | 20,418                    | 13,524            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 310,892                   | 1,354             |
| Combined valuation payroll                       | 135,495                   | 78,552            |
| Net pension UAL as a percentage of payroll       | 229%                      | 2%                |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$1,553)                 | (\$11)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$2,767                   | \$2,546           |
| Tier 1/Tier 2 valuation payroll                    | 18,813                    | 18,178            |
| Tier 1/Tier 2 pension normal cost rate             | 14.71%                    | 14.01%            |
| Tier 1/ Tier 2 Actuarial accrued liability         | \$900,875                 | \$797,508         |
| Actuarial asset value                              | 610,401                   | 809,678           |
| Tier 1/Tier 2 Unfunded actuarial accrued liability | 290,474                   | (12,170)          |
| Tier 1/ Tier 2 Funded status                       | 68%                       | 102%              |
| Combined valuation payroll                         | \$135,495                 | \$78,552          |
| Tier 1/Tier 2 UAL as a percentage of payroll       | 214%                      | (15%)             |
| Tier 1/Tier 2 UAL rate                             | 0.27%                     | (2.56%)           |
| (includes Multnomah Fire District #10)             |                           |                   |
| Tier 1/Tier 2 active members <sup>1</sup>          | 1                         | 1                 |
| Tier 1/Tier 2 dormant members                      | 0                         | 1                 |
| Tier 1/Tier 2 retirees and beneficiaries           | 3                         | 2                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 135,495           | 78,552            |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$9,299           | \$186,555         |
| 2. Employer reserves                                  | 231,659           | 577,033           |
| 3. Benefits in force reserve                          | 369,443           | 46,090            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$610,401</b>  | <b>\$809,678</b>  |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$809,678                                 |
| 2. Regular employer contributions   | (5,109)                                   |
| 3. Benefit payments and expenses  | (68,818)                                  |
| 4. Adjustments <sup>1</sup>   | (208,207)                                 |
| 5. Interest credited  | 82,857                                    |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$610,401</b>                          |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 2,767             | 2,546             |
| <b>Total</b>           | <b>\$2,767</b>    | <b>\$2,546</b>    |

### Change in Tier 1/Tier 2 Normal Cost

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$2,767        | \$2,767       | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$0               | \$0               |
| ▪ Tier 1 General Service                 | 0                 | 0                 |
| ▪ Tier 2 Police & Fire                   | 0                 | 6,708             |
| ▪ Tier 2 General Service                 | 64,052            | 55,773            |
| ▪ <b>Total Active Members</b>            | <b>\$64,052</b>   | <b>\$62,481</b>   |
| Dormant Members                          | 0                 | 626,179           |
| Retired Members and Beneficiaries        | 836,823           | 108,848           |
| <b>Total Actuarial Accrued Liability</b> | <b>\$900,875</b>  | <b>\$797,508</b>  |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$900,875      | \$900,875     | \$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  | \$900,875         | \$797,508         |
| 2. Actuarial value of assets  | 610,401           | 809,678           |
| 3. Unfunded accrued liability (1. – 2.)                                       | 290,474           | (12,170)          |
| 4. Funded percentage (2. ÷ 1.)  | 68%               | 102%              |
| 5. Combined valuation payroll   | \$135,495         | \$78,552          |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 214%              | (15%)             |

#### 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<br>December 31, 2016 | Payment    | Interest   | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|------------|------------|--------------------------|------------------------|
| December 31, 2013 | (\$175,192)              | (\$13,884) | (\$12,081) | (\$173,389)              | (\$14,370)             |
| December 31, 2015 | \$99,612                 | \$7,289    | \$6,892    | \$99,215                 | \$7,544                |
| December 31, 2017 | N/A                      | N/A        | N/A        | \$364,648                | \$25,747               |
| <b>Total</b>      |                          |            |            | <b>\$290,474</b>         | <b>\$18,921</b>        |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$797,508          |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 2,409              |
| c. Benefit payments during 2017  | (68,287)           |
| d. Interest at 7.20% to December 31, 2017  | 55,049             |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 786,679            |
| 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.)               | 786,679            |
| 2. Actuarial accrued liability at December 31, 2017                                  | 900,875            |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (114,196)          |
| 4. Expected actuarial value of assets  |                    |
| a. Actuarial value of assets at December 31, 2016                                    | 809,678            |
| b. Contributions for 2017 <sup>1</sup>   | (5,109)            |
| c. Benefit payments and expenses during 2017   | (68,818)           |
| d. Interest at 7.20% to December 31, 2017  | 55,635             |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 791,386            |
| 5. Actuarial value of assets at December 31, 2017                                    | 610,401            |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | (180,985)          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>(\$295,181)</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                   |
|---|-------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>(\$12,170)</b> |
| 2. Expected increase  | 7,463             |
| 3. Liability (gain)/loss  | 114,196           |
| 4. Asset (gain)/loss  | 180,985           |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                 |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$290,474</b>  |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 2,767             | 18,813                                   | 14.71%           | 2,546             | 18,178                                   | 14.01%           |
| <b>Total</b>           | <b>\$2,767</b>    | <b>\$18,813</b>                          | <b>14.71%</b>    | <b>\$2,546</b>    | <b>\$18,178</b>                          | <b>14.01%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$290,474         | (\$12,170)        |
| 2. Next year's Tier 1/Tier 2 UAL payment | 18,921            | (2,118)           |
| 3. Combined valuation payroll            | 135,495           | 78,552            |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 13.96%            | (2.70%)           |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 14.71%   | 14.01%  |
| b. Tier 1/Tier 2 UAL rate                             | 13.96%   | (2.70%)   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 28.82%   | 11.45%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |          |
|--|--------------------------|----------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 11.38%   |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%    |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 11.38%   |
| 4. Size of rate collar   |                          |          |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 2.28%    |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%    |
| c. Funded percentage   |                          | 68%      |
| 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.) |                          | 3.60%    |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 7.78%    |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 14.98%   |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 28.82%   |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (13.84%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 13.96%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 0.12%    |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 14.98%   |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%    |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%    |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 14.71%   |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 14.71%   |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 14.98%   |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 14.71%   | 14.01%  |
| b. Tier 1/Tier 2 UAL rate  | 0.12%  | (2.70%)   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 14.98%   | 11.45%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service | Police & Fire    | Total            |
|-----------------------------------|-----------------|------------------|------------------|
| Tier 1                            | \$0             | \$0              | \$0              |
| Tier 2                            | 18,813          | 0                | 18,813           |
| Tier 1/Tier 2 valuation payroll   | 18,813          | 0                | 18,813           |
| OPSRP valuation payroll           | 0               | 116,682          | 116,682          |
| <b>Combined valuation payroll</b> | <b>\$18,813</b> | <b>\$116,682</b> | <b>\$135,495</b> |

### *Employer Member Census*

|  | December 31 |          |          |          |          |          |          |          |
|--|-------------|----------|----------|----------|----------|----------|----------|----------|
|  | 2017        |          |          |          | 2016     |          |          |          |
|  | Tier 1      | Tier 2   | OPSRP    | Total    | Tier 1   | Tier 2   | OPSRP    | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |          |          |          |          |          |
| General Service  | 0           | 1        | 0        | 1        | 0        | 1        | 0        | 1        |
| Police & Fire  | 0           | 0        | 2        | 2        | 0        | 0        | 1        | 1        |
| Total  | 0           | 1        | 2        | 3        | 0        | 1        | 1        | 2        |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Police & Fire  | 0           | 0        | N/A      | 0        | 0        | 1        | N/A      | 1        |
| Total  | 0           | 0        | N/A      | 0        | 0        | 1        | N/A      | 1        |
| <b>Dormant Members</b>   |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 1        | 0        | 0        | 1        |
| Total  | 0           | 0        | 0        | 0        | 1        | 0        | 0        | 1        |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 3           | 0        | 0        | 3        | 2        | 0        | 0        | 2        |
| Total  | 3           | 0        | 0        | 3        | 2        | 0        | 0        | 2        |
| <b>Grand Total Number of Members</b>                                   | <b>3</b>    | <b>1</b> | <b>2</b> | <b>6</b> | <b>3</b> | <b>2</b> | <b>1</b> | <b>6</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             | 1        | 3,678                   |
| 35-39           |       |                                  | 60-64                             |          |                         |
| 40-44           |       |                                  | 65-69                             |          |                         |
| 45-49           |       |                                  | 70-74                             | 1        | 283                     |
| 50-54           |       |                                  | 75-79                             | 1        | 305                     |
| 55-59           |       |                                  | 80-84                             |          |                         |
| 60-64           |       |                                  | 85-89                             |          |                         |
| 65-69           |       |                                  | 90-94                             |          |                         |
| 70-74           |       |                                  | 95-99                             |          |                         |
| 75+             |       |                                  | 100+                              |          |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      | <b>3</b> | <b>1,422</b>            |

# 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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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.



October 2018

Harbor Water PUD/2771  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Harbor Water PUD/2771

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.



October 2018  
Harbor Water PUD/2771

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**

**INDEPENDENT EMPLOYERS**

**Harbor Water PUD -- #2771**

**October 2018**

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## Executive Summary

Milliman has prepared this report for Harbor Water PUD to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Harbor Water PUD.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Harbor Water PUD***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 19.39%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | (4.35%)       | (4.35%)         | (4.35%)       |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>16.49%</b> | <b>5.50%</b>    | <b>10.13%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>16.55%</b> | <b>5.50%</b>    | <b>10.13%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 120%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 15.04%             | 15.04%                        |
| Minimum 2021-2023 Rate                                       | 12.03%             | 9.02%                         |
| Maximum 2021-2023 Rate                                       | 18.05%             | 21.06%                        |

# 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               | \$796,837                     | \$667,827                             | (\$129,010)          | 119%                 | \$285,733           | (45%)   |
| 12/31/2013               | 919,744                       | 695,744                               | (224,000)            | 132%                 | 291,782             | (77%)   |
| 12/31/2014               | 991,048                       | 820,895                               | (170,153)            | 121%                 | 327,589             | (52%)   |
| 12/31/2015               | 1,030,209                     | 916,708                               | (113,501)            | 112%                 | 385,126             | (29%)   |
| 12/31/2016               | 1,114,188                     | 1,001,585                             | (112,603)            | 111%                 | 375,682             | (30%)   |
| 12/31/2017               | 1,281,430                     | 1,072,193                             | (209,237)            | 120%                 | 378,943             | (55%)   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Harbor Water PUD***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | (\$209,237)               | (\$112,603)       |
| Allocated pooled OPSRP UAL                       | 57,103                    | 64,678            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | (152,134)                 | (47,925)          |
| Combined valuation payroll                       | 378,943                   | 375,682           |
| Net pension UAL as a percentage of payroll       | (40%)                     | (13%)             |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$4,342)                 | (\$51)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$46,218                  | \$45,054          |
| Tier 1/Tier 2 valuation payroll                                  | 238,318                   | 240,064           |
| Tier 1/Tier 2 pension normal cost rate                           | 19.39%                    | 18.77%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$1,072,193               | \$1,001,585       |
| Actuarial asset value  | 1,281,430                 | 1,114,188         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | (209,237)                 | (112,603)         |
| Tier 1/ Tier 2 Funded status                                     | 120%                      | 111%              |
| Combined valuation payroll                                       | \$378,943                 | \$375,682         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | (55%)                     | (30%)             |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | (4.35%)                   | (3.73%)           |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 3                         | 3                 |
| Tier 1/Tier 2 dormant members                                    | 0                         | 0                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 1                         | 1                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 378,943           | 375,682           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$312,843          | \$288,860          |
| 2. Employer reserves                                  | 945,346            | 802,940            |
| 3. Benefits in force reserve                          | 23,240             | 22,388             |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$1,281,430</b> | <b>\$1,114,188</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$1,114,188                               |
| 2. Regular employer contributions   | 16,297                                    |
| 3. Benefit payments and expenses  | (4,329)                                   |
| 4. Adjustments <sup>1</sup>   | 3,055                                     |
| 5. Interest credited  | 152,219                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$1,281,430</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 32,829            | 32,025            |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 13,389            | 13,029            |
| <b>Total</b>           | <b>\$46,218</b>   | <b>\$45,054</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$46,218       | \$46,218      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017  | December 31, 2016  |
|--|--------------------|--------------------|
| Active Members                           |                    |                    |
| ▪ Tier 1 Police & Fire                   | \$0                | \$0                |
| ▪ Tier 1 General Service                 | 792,839            | 740,884            |
| ▪ Tier 2 Police & Fire                   | 0                  | 0                  |
| ▪ Tier 2 General Service                 | 226,713            | 207,830            |
| ▪ <b>Total Active Members</b>            | <b>\$1,019,552</b> | <b>\$948,714</b>   |
| Dormant Members                          | 0                  | 0                  |
| Retired Members and Beneficiaries        | 52,641             | 52,871             |
| <b>Total Actuarial Accrued Liability</b> | <b>\$1,072,193</b> | <b>\$1,001,585</b> |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$1,072,193    | \$1,072,193   | \$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  | \$1,072,193       | \$1,001,585       |
| 2. Actuarial value of assets  | 1,281,430         | 1,114,188         |
| 3. Unfunded accrued liability (1. – 2.)                                       | (209,237)         | (112,603)         |
| 4. Funded percentage (2. ÷ 1.)  | 120%              | 111%              |
| 5. Combined valuation payroll   | \$378,943         | \$375,682         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | (55%)             | (30%)             |

#### 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<br>December 31, 2016 | Payment    | Interest   | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|------------|------------|--------------------------|------------------------|
| December 31, 2013 | (\$222,515)              | (\$17,635) | (\$15,344) | (\$220,224)              | (\$18,252)             |
| December 31, 2015 | \$110,299                | \$8,071    | \$7,632    | \$109,860                | \$8,354                |
| December 31, 2017 | N/A                      | N/A        | N/A        | (\$98,873)               | (\$6,981)              |
| <b>Total</b>      |                          |            |            | <b>(\$209,237)</b>       | <b>(\$16,879)</b>      |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$1,001,585      |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 42,631           |
| c. Benefit payments during 2017  | (4,296)          |
| d. Interest at 7.20% to December 31, 2017  | 73,494           |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 1,113,414        |
| 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.)               | 1,113,414        |
| 2. Actuarial accrued liability at December 31, 2017                                  | 1,072,193        |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 41,221           |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 1,114,188        |
| b. Contributions for 2017 <sup>1</sup>   | 16,297           |
| c. Benefit payments and expenses during 2017   | (4,329)          |
| d. Interest at 7.20% to December 31, 2017  | 80,652           |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 1,206,808        |
| 5. Actuarial value of assets at December 31, 2017                                    | 1,281,430        |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 74,622           |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$115,843</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                    |
|---|--------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>(\$112,603)</b> |
| 2. Expected increase  | 19,209             |
| 3. Liability (gain)/loss  | (41,221)           |
| 4. Asset (gain)/loss  | (74,622)           |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                  |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>(\$209,237)</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 32,829            | 157,206                                  | 20.88%           | 32,025            | 158,881                                  | 20.16%           |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 13,389            | 81,112                                   | 16.51%           | 13,029            | 81,183                                   | 16.05%           |
| <b>Total</b>           | <b>\$46,218</b>   | <b>\$238,318</b>                         | <b>19.39%</b>    | <b>\$45,054</b>   | <b>\$240,064</b>                         | <b>18.77%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | (\$209,237)       | (\$112,603)       |
| 2. Next year's Tier 1/Tier 2 UAL payment | (16,879)          | (9,591)           |
| 3. Combined valuation payroll            | 378,943           | 375,682           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | (4.45%)           | (2.55%)           |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 19.39%   | 18.77%  |
| b. Tier 1/Tier 2 UAL rate                             | (4.45%)  | (2.55%)   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 15.09%   | 16.36%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 12.04%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 12.04%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 2.41%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%   |
| c. Funded percentage   |                          | 120%    |
| 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.) |                          | 3.00%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 9.04%   |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 15.04%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 15.09%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (0.05%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | (4.45%) |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | (4.50%) |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 15.04%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 19.39%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 19.39%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 15.04%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 19.39%   | 18.77%  |
| b. Tier 1/Tier 2 UAL rate  | (4.50%)  | (3.87%)   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 15.04%   | 15.04%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$157,206        | \$0           | \$157,206        |
| Tier 2                            | 81,112           | 0             | 81,112           |
| Tier 1/Tier 2 valuation payroll   | 238,318          | 0             | 238,318          |
| OPSRP valuation payroll           | 140,625          | 0             | 140,625          |
| <b>Combined valuation payroll</b> | <b>\$378,943</b> | <b>\$0</b>    | <b>\$378,943</b> |

### *Employer Member Census*

|  | December 31 |          |          |          |          |          |          |          |
|--|-------------|----------|----------|----------|----------|----------|----------|----------|
|  | 2017        |          |          |          | 2016     |          |          |          |
|  | Tier 1      | Tier 2   | OPSRP    | Total    | Tier 1   | Tier 2   | OPSRP    | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |          |          |          |          |          |
| General Service  | 2           | 1        | 2        | 5        | 2        | 1        | 2        | 5        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 2           | 1        | 2        | 5        | 2        | 1        | 2        | 5        |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Police & Fire  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Total  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| <b>Dormant Members</b>   |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |          |          |          |          |          |
| General Service  | 0           | 1        | 0        | 1        | 0        | 1        | 0        | 1        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 1        | 0        | 1        | 0        | 1        | 0        | 1        |
| <b>Grand Total Number of Members</b>                                   | <b>2</b>    | <b>2</b> | <b>2</b> | <b>6</b> | <b>2</b> | <b>2</b> | <b>2</b> | <b>6</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          | 1        |          |          |          |          | 1        |
| 60-64        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 65-69        |                  |          |          |          | 1        |          |          |          |          | 1        |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>1</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>3</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             |          |                         |
| 35-39           |       |                                  | 60-64                             |          |                         |
| 40-44           |       |                                  | 65-69                             |          |                         |
| 45-49           |       |                                  | 70-74                             | 1        | 378                     |
| 50-54           |       |                                  | 75-79                             |          |                         |
| 55-59           |       |                                  | 80-84                             |          |                         |
| 60-64           |       |                                  | 85-89                             |          |                         |
| 65-69           |       |                                  | 90-94                             |          |                         |
| 70-74           |       |                                  | 95-99                             |          |                         |
| 75+             |       |                                  | 100+                              |          |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      | <b>1</b> | <b>378</b>              |

## 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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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.



October 2018

Ice Fountain Water District/2717  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Ice Fountain Water District/2717

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.



October 2018  
Ice Fountain Water District/2717

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**

**INDEPENDENT EMPLOYERS**

**Ice Fountain Water District -- #2717**

**October 2018**

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# Executive Summary

Milliman has prepared this report for Ice Fountain Water District to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Ice Fountain Water District.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Ice Fountain Water District***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 14.73%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 2.98%         | 2.98%           | 2.98%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>19.16%</b> | <b>12.83%</b>   | <b>17.46%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>19.22%</b> | <b>12.83%</b>   | <b>17.46%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

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

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 17.71%             | 17.71%                        |
| Minimum 2021-2023 Rate                                       | 14.17%             | 10.63%                        |
| Maximum 2021-2023 Rate                                       | 21.25%             | 24.79%                        |

# 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               | \$708,964                     | \$738,703                             | \$29,739             | 96%                  | \$236,893           | 13%   |
| 12/31/2013               | 794,979                       | 776,808                               | (18,171)             | 102%                 | 206,630             | (9%)  |
| 12/31/2014               | 820,816                       | 897,711                               | 76,895               | 91%                  | 305,250             | 25%   |
| 12/31/2015               | 823,241                       | 960,165                               | 136,924              | 86%                  | 331,215             | 41%   |
| 12/31/2016               | 864,942                       | 1,071,187                             | 206,245              | 81%                  | 348,153             | 59%   |
| 12/31/2017               | 970,747                       | 1,129,421                             | 158,674              | 86%                  | 368,474             | 43%   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### *Ice Fountain Water District*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$158,674                 | \$206,245         |
| Allocated pooled OPSRP UAL                       | 55,526                    | 59,939            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 214,200                   | 266,184           |
| Combined valuation payroll                       | 368,474                   | 348,153           |
| Net pension UAL as a percentage of payroll       | 58%                       | 76%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$4,222)                 | (\$47)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$19,333                  | \$17,893          |
| Tier 1/Tier 2 valuation payroll                                  | 131,257                   | 121,782           |
| Tier 1/Tier 2 pension normal cost rate                           | 14.73%                    | 14.69%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$1,129,421               | \$1,071,187       |
| Actuarial asset value  | 970,747                   | 864,942           |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 158,674                   | 206,245           |
| Tier 1/ Tier 2 Funded status                                     | 86%                       | 81%               |
| Combined valuation payroll                                       | \$368,474                 | \$348,153         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 43%                       | 59%               |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 2.98%                     | 3.02%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 1                         | 1                 |
| Tier 1/Tier 2 dormant members                                    | 0                         | 0                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 2                         | 3                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 368,474           | 348,153           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$139,639         | \$126,377         |
| 2. Employer reserves                                  | 645,843           | 543,879           |
| 3. Benefits in force reserve                          | 185,264           | 194,686           |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$970,747</b>  | <b>\$864,942</b>  |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$864,942                                 |
| 2. Regular employer contributions   | 15,916                                    |
| 3. Benefit payments and expenses  | (34,510)                                  |
| 4. Adjustments <sup>1</sup>   | 1,016                                     |
| 5. Interest credited  | 123,383                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$970,747</b>                          |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 19,333            | 17,893            |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$19,333</b>   | <b>\$17,893</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$19,333       | \$19,333      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017  | December 31, 2016  |
|--|--------------------|--------------------|
| Active Members                           |                    |                    |
| ▪ Tier 1 Police & Fire                   | \$0                | \$0                |
| ▪ Tier 1 General Service                 | 709,781            | 611,408            |
| ▪ Tier 2 Police & Fire                   | 0                  | 0                  |
| ▪ Tier 2 General Service                 | 0                  | 0                  |
| ▪ <b>Total Active Members</b>            | <b>\$709,781</b>   | <b>\$611,408</b>   |
| Dormant Members                          | 0                  | 0                  |
| Retired Members and Beneficiaries        | 419,640            | 459,779            |
| <b>Total Actuarial Accrued Liability</b> | <b>\$1,129,421</b> | <b>\$1,071,187</b> |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$1,129,421    | \$1,129,421   | \$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  | \$1,129,421       | \$1,071,187       |
| 2. Actuarial value of assets  | 970,747           | 864,942           |
| 3. Unfunded accrued liability (1. – 2.)                                       | 158,674           | 206,245           |
| 4. Funded percentage (2. ÷ 1.)  | 86%               | 81%               |
| 5. Combined valuation payroll   | \$368,474         | \$348,153         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 43%               | 59%               |

### 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<br>December 31, 2016 | Payment   | Interest  | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|-----------|-----------|--------------------------|------------------------|
| December 31, 2013 | (\$18,050)               | (\$1,430) | (\$1,245) | (\$17,865)               | (\$1,481)              |
| December 31, 2015 | \$155,043                | \$11,345  | \$10,728  | \$154,426                | \$11,743               |
| December 31, 2017 | N/A                      | N/A       | N/A       | \$22,113                 | \$1,561                |
| <b>Total</b>      |                          |           |           | <b>\$158,674</b>         | <b>\$11,823</b>        |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$1,071,187     |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 16,931          |
| c. Benefit payments during 2017  | (34,244)        |
| d. Interest at 7.20% to December 31, 2017  | 76,502          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 1,130,376       |
| 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.)               | 1,130,376       |
| 2. Actuarial accrued liability at December 31, 2017                                  | 1,129,421       |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 955             |
| 4. Expected actuarial value of assets  |                 |
| a. Actuarial value of assets at December 31, 2016                                    | 864,942         |
| b. Contributions for 2017 <sup>1</sup>   | 15,916          |
| c. Benefit payments and expenses during 2017   | (34,510)        |
| d. Interest at 7.20% to December 31, 2017  | 61,606          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 907,954         |
| 5. Actuarial value of assets at December 31, 2017                                    | 970,747         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 62,793          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$63,748</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$206,245</b> |
| 2. Expected increase  | 16,177           |
| 3. Liability (gain)/loss  | (955)            |
| 4. Asset (gain)/loss  | (62,793)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$158,674</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 19,333            | 131,257                                  | 14.73%           | 17,893            | 121,782                                  | 14.69%           |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| <b>Total</b>           | <b>\$19,333</b>   | <b>\$131,257</b>                         | <b>14.73%</b>    | <b>\$17,893</b>   | <b>\$121,782</b>                         | <b>14.69%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$158,674         | \$206,245         |
| 2. Next year's Tier 1/Tier 2 UAL payment | 11,823            | 14,805            |
| 3. Combined valuation payroll            | 368,474           | 348,153           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 3.21%             | 4.25%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 14.73%   | 14.69%  |
| b. Tier 1/Tier 2 UAL rate                             | 3.21%  | 4.25%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 18.09%   | 19.08%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 14.71%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 14.71%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 2.94%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%   |
| 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.) |                          | 3.00%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 11.71%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 17.71%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 18.09%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (0.38%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 3.21%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 2.83%   |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 17.71%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 14.73%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 14.73%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 17.71%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 14.73%   | 14.69%  |
| b. Tier 1/Tier 2 UAL rate  | 2.83%  | 2.88%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 17.71%   | 17.71%  |



# Data

## Demographic Information

### Employer Valuation Payroll

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$131,257        | \$0           | \$131,257        |
| Tier 2                            | 0                | 0             | 0                |
| Tier 1/Tier 2 valuation payroll   | 131,257          | 0             | 131,257          |
| OPSRP valuation payroll           | 237,217          | 0             | 237,217          |
| <b>Combined valuation payroll</b> | <b>\$368,474</b> | <b>\$0</b>    | <b>\$368,474</b> |

### Employer Member Census

|  | December 31 |          |          |          |          |          |          |          |
|--|-------------|----------|----------|----------|----------|----------|----------|----------|
|  | 2017        |          |          |          | 2016     |          |          |          |
|  | Tier 1      | Tier 2   | OPSRP    | Total    | Tier 1   | Tier 2   | OPSRP    | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |          |          |          |          |          |
| General Service  | 1           | 0        | 4        | 5        | 1        | 0        | 4        | 5        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 1           | 0        | 4        | 5        | 1        | 0        | 4        | 5        |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Police & Fire  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Total  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| <b>Dormant Members</b>   |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |          |          |          |          |          |
| General Service  | 2           | 0        | 0        | 2        | 3        | 0        | 0        | 3        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 2           | 0        | 0        | 2        | 3        | 0        | 0        | 3        |
| <b>Grand Total Number of Members</b>                                   | <b>3</b>    | <b>0</b> | <b>4</b> | <b>7</b> | <b>4</b> | <b>0</b> | <b>4</b> | <b>8</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          | 1        |          |          |          | 1        |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             |          |                         |
| 35-39           |       |                                  | 60-64                             |          |                         |
| 40-44           |       |                                  | 65-69                             | 2        | 1,516                   |
| 45-49           |       |                                  | 70-74                             |          |                         |
| 50-54           |       |                                  | 75-79                             |          |                         |
| 55-59           |       |                                  | 80-84                             |          |                         |
| 60-64           |       |                                  | 85-89                             |          |                         |
| 65-69           |       |                                  | 90-94                             |          |                         |
| 70-74           |       |                                  | 95-99                             |          |                         |
| 75+             |       |                                  | 100+                              |          |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      | <b>2</b> | <b>1,516</b>            |

# 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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October 2018

Jackson County Fire District #5/2556  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Jackson County Fire District #5/2556

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.



October 2018  
Jackson County Fire District #5/2556

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**

**INDEPENDENT EMPLOYERS**

**Jackson County Fire District #5 -- #2556**

**October 2018**

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# Executive Summary

Milliman has prepared this report for Jackson County Fire District #5 to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Jackson County Fire District #5.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Jackson County Fire District #5***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 21.36%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 9.38%         | 9.38%           | 9.38%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>32.19%</b> | <b>19.23%</b>   | <b>23.86%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>32.25%</b> | <b>19.23%</b>   | <b>23.86%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 65%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 30.74%             | 30.74%                        |
| Minimum 2021-2023 Rate                                       | 24.59%             | 18.44%                        |
| Maximum 2021-2023 Rate                                       | 36.89%             | 43.04%                        |

# 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               | \$12,643,144                  | \$15,114,250                          | \$2,471,106          | 84%                  | \$2,256,324         | 110%  |
| 12/31/2013               | 14,169,543                    | 15,674,310                            | 1,504,767            | 90%                  | 2,407,905           | 62%   |
| 12/31/2014               | 14,840,834                    | 18,877,511                            | 4,036,677            | 79%                  | 2,255,075           | 179%  |
| 12/31/2015               | 13,145,707                    | 19,673,311                            | 6,527,604            | 67%                  | 2,380,009           | 274%  |
| 12/31/2016               | 12,861,177                    | 21,512,665                            | 8,651,488            | 60%                  | 2,371,618           | 365%  |
| 12/31/2017               | 14,356,262                    | 22,187,426                            | 7,831,164            | 65%                  | 2,524,540           | 310%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Jackson County Fire District #5***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$7,831,164               | \$8,651,488       |
| Allocated pooled OPSRP UAL                       | 380,426                   | 408,303           |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 8,211,590                 | 9,059,791         |
| Combined valuation payroll                       | 2,524,540                 | 2,371,618         |
| Net pension UAL as a percentage of payroll       | 325%                      | 382%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$28,927)                | (\$323)           |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$224,255                 | \$213,512         |
| Tier 1/Tier 2 valuation payroll                                  | 1,050,043                 | 1,003,862         |
| Tier 1/Tier 2 pension normal cost rate                           | 21.36%                    | 21.27%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$22,187,426              | \$21,512,665      |
| Actuarial asset value  | 14,356,262                | 12,861,177        |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 7,831,164                 | 8,651,488         |
| Tier 1/ Tier 2 Funded status                                     | 65%                       | 60%               |
| Combined valuation payroll                                       | \$2,524,540               | \$2,371,618       |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 310%                      | 365%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 9.38%                     | 11.83%            |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 10                        | 10                |
| Tier 1/Tier 2 dormant members                                    | 1                         | 1                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 28                        | 28                |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 2,524,540         | 2,371,618         |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017   | December 31, 2016   |
|---|---------------------|---------------------|
| 1. Member reserves                                    | \$978,664           | \$894,294           |
| 2. Employer reserves                                  | 6,181,744           | 5,111,514           |
| 3. Benefits in force reserve                          | 7,195,854           | 6,855,370           |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$14,356,262</b> | <b>\$12,861,177</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$12,861,177                              |
| 2. Regular employer contributions   | 245,278                                   |
| 3. Benefit payments and expenses  | (1,340,411)                               |
| 4. Adjustments <sup>1</sup>   | 742,498                                   |
| 5. Interest credited  | 1,847,720                                 |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$14,356,262</b>                       |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$78,849          | \$75,969          |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 145,406           | 137,543           |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$224,255</b>  | <b>\$213,512</b>  |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$224,255      | \$224,255     | \$0        |



## Tier 1/Tier 2 Valuation Results

### Liabilities

#### ***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.

#### ***Summary of Actuarial Accrued Liability by Tier/Member Classification***

|  | December 31, 2017   | December 31, 2016   |
|--|---------------------|---------------------|
| Active Members                           |                     |                     |
| ▪ Tier 1 Police & Fire                   | \$3,061,912         | \$2,855,367         |
| ▪ Tier 1 General Service                 | 0                   | 0                   |
| ▪ Tier 2 Police & Fire                   | 2,682,153           | 2,332,797           |
| ▪ Tier 2 General Service                 | 0                   | 0                   |
| ▪ <b>Total Active Members</b>            | <b>\$5,744,065</b>  | <b>\$5,188,164</b>  |
| Dormant Members                          | 144,077             | 134,520             |
| Retired Members and Beneficiaries        | 16,299,284          | 16,189,981          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$22,187,426</b> | <b>\$21,512,665</b> |

#### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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

|                             | Before<br>Changes | After<br>Changes | Net<br>Change |
|-----------------------------|-------------------|------------------|---------------|
| Actuarial Accrued Liability | \$22,187,426      | \$22,187,426     | \$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  | \$22,187,426      | \$21,512,665      |
| 2. Actuarial value of assets  | 14,356,262        | 12,861,177        |
| 3. Unfunded accrued liability (1. – 2.)                                       | 7,831,164         | 8,651,488         |
| 4. Funded percentage (2. ÷ 1.)  | 65%               | 60%               |
| 5. Combined valuation payroll   | \$2,524,540       | \$2,371,618       |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 310%              | 365%              |

#### 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<br>December 31, 2016 | Payment   | Interest  | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|-----------|-----------|--------------------------|------------------------|
| December 31, 2013 | \$1,494,795              | \$118,465 | \$103,079 | \$1,479,409              | \$122,610              |
| December 31, 2015 | \$5,022,742              | \$367,536 | \$347,532 | \$5,002,738              | \$380,407              |
| December 31, 2017 | N/A                      | N/A       | N/A       | \$1,349,017              | \$95,249               |
| <b>Total</b>      |                          |           |           | <b>\$7,831,164</b>       | <b>\$598,266</b>       |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$21,512,665       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 202,001            |
| c. Benefit payments during 2017  | (1,330,072)        |
| d. Interest at 7.20% to December 31, 2017  | 1,508,301          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 21,892,895         |
| 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.)               | 21,892,895         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 22,187,426         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (294,531)          |
| 4. Expected actuarial value of assets  |                    |
| a. Actuarial value of assets at December 31, 2016                                    | 12,861,177         |
| b. Contributions for 2017 <sup>1</sup>   | 245,278            |
| c. Benefit payments and expenses during 2017   | (1,340,411)        |
| d. Interest at 7.20% to December 31, 2017  | 886,580            |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 12,652,624         |
| 5. Actuarial value of assets at December 31, 2017                                    | 14,356,262         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 1,703,638          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$1,409,107</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                    |
|---|--------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$8,651,488</b> |
| 2. Expected increase  | 588,783            |
| 3. Liability (gain)/loss  | 294,531            |
| 4. Asset (gain)/loss  | (1,703,638)        |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                  |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$7,831,164</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$78,849          | \$308,044                                | 25.60%           | \$75,969          | \$298,146                                | 25.48%           |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 145,406           | 741,999                                  | 19.60%           | 137,543           | 705,716                                  | 19.49%           |
| Tier 2 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| <b>Total</b>           | <b>\$224,255</b>  | <b>\$1,050,043</b>                       | <b>21.36%</b>    | <b>\$213,512</b>  | <b>\$1,003,862</b>                       | <b>21.27%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$7,831,164       | \$8,651,488       |
| 2. Next year's Tier 1/Tier 2 UAL payment | 598,266           | 636,672           |
| 3. Combined valuation payroll            | 2,524,540         | 2,371,618         |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 23.70%            | 26.85%            |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 21.36%   | 21.27%  |
| b. Tier 1/Tier 2 UAL rate                             | 23.70%   | 26.85%  |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 45.21%   | 48.26%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |          |
|--|--------------------------|----------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 23.64%   |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%    |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 23.64%   |
| 4. Size of rate collar   |                          |          |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 4.73%    |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 4.73%    |
| c. Funded percentage   |                          | 65%      |
| 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.) |                          | 7.10%    |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 16.54%   |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 30.74%   |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 45.21%   |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (14.47%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 23.70%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 9.23%    |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 30.74%   |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%    |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%    |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 21.36%   |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 21.36%   |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 30.74%   |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 21.36%   | 21.27%  |
| b. Tier 1/Tier 2 UAL rate  | 9.23%  | 11.69%  |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 30.74%   | 33.10%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service | Police & Fire      | Total              |
|-----------------------------------|-----------------|--------------------|--------------------|
| Tier 1                            | \$0             | \$308,044          | \$308,044          |
| Tier 2                            | 0               | 741,999            | 741,999            |
| Tier 1/Tier 2 valuation payroll   | 0               | 1,050,043          | 1,050,043          |
| OPSRP valuation payroll           | 14,985          | 1,459,513          | 1,474,497          |
| <b>Combined valuation payroll</b> | <b>\$14,985</b> | <b>\$2,509,556</b> | <b>\$2,524,540</b> |

### *Employer Member Census*

|  | December 31 |          |           |           |           |           |           |           |
|--|-------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|
|  | 2017        |          |           |           | 2016      |           |           |           |
|  | Tier 1      | Tier 2   | OPSRP     | Total     | Tier 1    | Tier 2    | OPSRP     | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |          |           |           |           |           |           |           |
| General Service  | 0           | 0        | 1         | 1         | 0         | 0         | 1         | 1         |
| Police & Fire  | 3           | 7        | 16        | 26        | 3         | 7         | 15        | 25        |
| Total  | 3           | 7        | 17        | 27        | 3         | 7         | 16        | 26        |
| <b>Active Members with previous service segments with the employer</b> |             |          |           |           |           |           |           |           |
| General Service  | 0           | 0        | N/A       | 0         | 0         | 0         | N/A       | 0         |
| Police & Fire  | 1           | 1        | N/A       | 2         | 1         | 1         | N/A       | 2         |
| Total  | 1           | 1        | N/A       | 2         | 1         | 1         | N/A       | 2         |
| <b>Dormant Members</b>   |             |          |           |           |           |           |           |           |
| General Service  | 0           | 0        | 1         | 1         | 0         | 0         | 1         | 1         |
| Police & Fire  | 0           | 1        | 0         | 1         | 0         | 1         | 0         | 1         |
| Total  | 0           | 1        | 1         | 2         | 0         | 1         | 1         | 2         |
| <b>Retired Members and Beneficiaries</b>                               |             |          |           |           |           |           |           |           |
| General Service  | 3           | 0        | 0         | 3         | 3         | 0         | 0         | 3         |
| Police & Fire  | 25          | 0        | 0         | 25        | 24        | 1         | 0         | 25        |
| Total  | 28          | 0        | 0         | 28        | 27        | 1         | 0         | 28        |
| <b>Grand Total Number of Members</b>                                   | <b>32</b>   | <b>9</b> | <b>18</b> | <b>59</b> | <b>31</b> | <b>10</b> | <b>17</b> | <b>58</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          | 2        |          |          |          |          |          | 2         |
| 45-49        |                  |          | 1        | 1        |          |          |          |          |          | 2         |
| 50-54        |                  |          | 1        | 1        | 1        |          |          |          |          | 3         |
| 55-59        |                  |          |          |          |          | 2        |          | 1        |          | 3         |
| 60-64        |                  |          |          |          |          |          |          |          |          |           |
| 65-69        |                  |          |          |          |          |          |          |          |          |           |
| 70-74        |                  |          |          |          |          |          |          |          |          |           |
| 75+          |                  |          |          |          |          |          |          |          |          |           |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>2</b> | <b>4</b> | <b>1</b> | <b>2</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>10</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | Retired Members and Beneficiaries |           |                         |
|-----------------|----------|----------------------------------|-----------------------------------|-----------|-------------------------|
| Age             | Count    | Average Deferred Monthly Benefit | Age                               | Count     | Average Monthly Benefit |
| <20             |          |                                  | <45                               | 1         | 845                     |
| 20-24           |          |                                  | 45-49                             |           |                         |
| 25-29           |          |                                  | 50-54                             |           |                         |
| 30-34           |          |                                  | 55-59                             | 7         | 3,959                   |
| 35-39           |          |                                  | 60-64                             | 3         | 3,252                   |
| 40-44           |          |                                  | 65-69                             | 11        | 3,805                   |
| 45-49           | 1        | 1,346                            | 70-74                             | 5         | 2,528                   |
| 50-54           |          |                                  | 75-79                             | 1         | 2,702                   |
| 55-59           |          |                                  | 80-84                             |           |                         |
| 60-64           |          |                                  | 85-89                             |           |                         |
| 65-69           |          |                                  | 90-94                             |           |                         |
| 70-74           |          |                                  | 95-99                             |           |                         |
| 75+             |          |                                  | 100+                              |           |                         |
| <b>Total</b>    | <b>1</b> | <b>1,346</b>                     | <b>Total</b>                      | <b>28</b> | <b>3,411</b>            |

# 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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October 2018

Jefferson County Rural Fire Protection District #1/2575  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018

Jefferson County Rural Fire Protection District #1/2575

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.



October 2018  
Jefferson County Rural Fire Protection District #1/2575

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.

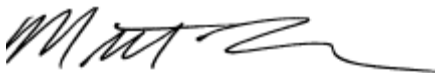
The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.


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, 2017**

## **OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM**

**INDEPENDENT EMPLOYERS**

**Jefferson County Rural Fire Protection District #1 -- #2575**

**October 2018**

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# Executive Summary

Milliman has prepared this report for Jefferson County Rural Fire Protection District #1 to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Jefferson County Rural Fire Protection District #1.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Jefferson County Rural Fire Protection District #1***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 15.78%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 3.49%         | 3.49%           | 3.49%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>20.72%</b> | <b>13.34%</b>   | <b>17.97%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>20.78%</b> | <b>13.34%</b>   | <b>17.97%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 85%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 19.27%             | 19.27%                        |
| Minimum 2021-2023 Rate                                       | 15.42%             | 11.57%                        |
| Maximum 2021-2023 Rate                                       | 23.12%             | 26.97%                        |

# 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               | \$1,740,658                   | \$1,800,503                           | \$59,845             | 97%                  | \$300,941           | 20%   |
| 12/31/2013               | 1,872,829                     | 1,921,988                             | 49,159               | 97%                  | 298,613             | 16%   |
| 12/31/2014               | 1,945,969                     | 2,295,670                             | 349,701              | 85%                  | 310,549             | 113%  |
| 12/31/2015               | 1,748,017                     | 2,189,466                             | 441,449              | 80%                  | 331,004             | 133%  |
| 12/31/2016               | 1,770,443                     | 2,297,998                             | 527,555              | 77%                  | 432,491             | 122%  |
| 12/31/2017               | 1,950,646                     | 2,284,841                             | 334,195              | 85%                  | 469,828             | 71%   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### ***Jefferson County Rural Fire Protection District #1***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$334,195                 | \$527,555         |
| Allocated pooled OPSRP UAL                       | 70,799                    | 74,459            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 404,994                   | 602,014           |
| Combined valuation payroll                       | 469,828                   | 432,491           |
| Net pension UAL as a percentage of payroll       | 86%                       | 139%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$5,383)                 | (\$59)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$11,109                  | \$10,866          |
| Tier 1/Tier 2 valuation payroll                                  | 70,389                    | 69,668            |
| Tier 1/Tier 2 pension normal cost rate                           | 15.78%                    | 15.60%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$2,284,841               | \$2,297,998       |
| Actuarial asset value  | 1,950,646                 | 1,770,443         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 334,195                   | 527,555           |
| Tier 1/ Tier 2 Funded status                                     | 85%                       | 77%               |
| Combined valuation payroll                                       | \$469,828                 | \$432,491         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 71%                       | 122%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 3.49%                     | 3.67%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 1                         | 1                 |
| Tier 1/Tier 2 dormant members                                    | 1                         | 1                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 6                         | 6                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 469,828           | 432,491           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$73,929           | \$66,895           |
| 2. Employer reserves                                  | 1,047,218          | 897,802            |
| 3. Benefits in force reserve                          | 829,499            | 805,746            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$1,950,646</b> | <b>\$1,770,443</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$1,770,443                               |
| 2. Regular employer contributions   | 13,075                                    |
| 3. Benefit payments and expenses  | (154,515)                                 |
| 4. Adjustments <sup>1</sup>   | 66,154                                    |
| 5. Interest credited  | 255,489                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$1,950,646</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 11,109            | 10,866            |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$11,109</b>   | <b>\$10,866</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$11,109       | \$11,109      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017  | December 31, 2016  |
|--|--------------------|--------------------|
| Active Members                           |                    |                    |
| ▪ Tier 1 Police & Fire                   | \$0                | \$0                |
| ▪ Tier 1 General Service                 | 0                  | 24,536             |
| ▪ Tier 2 Police & Fire                   | 212,149            | 191,917            |
| ▪ Tier 2 General Service                 | 0                  | 0                  |
| ▪ <b>Total Active Members</b>            | <b>\$212,149</b>   | <b>\$216,453</b>   |
| Dormant Members                          | 193,799            | 178,655            |
| Retired Members and Beneficiaries        | 1,878,893          | 1,902,890          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$2,284,841</b> | <b>\$2,297,998</b> |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$2,284,841    | \$2,284,841   | \$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  | \$2,284,841       | \$2,297,998       |
| 2. Actuarial value of assets  | 1,950,646         | 1,770,443         |
| 3. Unfunded accrued liability (1. – 2.)                                       | 334,195           | 527,555           |
| 4. Funded percentage (2. ÷ 1.)  | 85%               | 77%               |
| 5. Combined valuation payroll   | \$469,828         | \$432,491         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 71%               | 122%              |

#### 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<br>December 31, 2016 | Payment  | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|----------|----------|--------------------------|------------------------|
| December 31, 2013 | \$48,834                 | \$3,870  | \$3,368  | \$48,332                 | \$4,006                |
| December 31, 2015 | \$392,230                | \$28,701 | \$27,139 | \$390,668                | \$29,706               |
| December 31, 2017 | N/A                      | N/A      | N/A      | (\$104,805)              | (\$7,400)              |
| <b>Total</b>      |                          |          |          | <b>\$334,195</b>         | <b>\$26,312</b>        |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$2,297,998      |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 10,282           |
| c. Benefit payments during 2017  | (153,323)        |
| d. Interest at 7.20% to December 31, 2017  | 160,306          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 2,315,263        |
| 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.)               | 2,315,263        |
| 2. Actuarial accrued liability at December 31, 2017                                  | 2,284,841        |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 30,422           |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 1,770,443        |
| b. Contributions for 2017 <sup>1</sup>   | 13,075           |
| c. Benefit payments and expenses during 2017   | (154,515)        |
| d. Interest at 7.20% to December 31, 2017  | 122,380          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 1,751,383        |
| 5. Actuarial value of assets at December 31, 2017                                    | 1,950,646        |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 199,263          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$229,685</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$527,555</b> |
| 2. Expected increase  | 36,325           |
| 3. Liability (gain)/loss  | (30,422)         |
| 4. Asset (gain)/loss  | (199,263)        |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$334,195</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 11,109            | 70,389                                   | 15.78%           | 10,866            | 69,668                                   | 15.60%           |
| Tier 2 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| <b>Total</b>           | <b>\$11,109</b>   | <b>\$70,389</b>                          | <b>15.78%</b>    | <b>\$10,866</b>   | <b>\$69,668</b>                          | <b>15.60%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$334,195         | \$527,555         |
| 2. Next year's Tier 1/Tier 2 UAL payment | 26,312            | 38,678            |
| 3. Combined valuation payroll            | 469,828           | 432,491           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 5.60%             | 8.94%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 15.78%   | 15.60%  |
| b. Tier 1/Tier 2 UAL rate                             | 5.60%  | 8.94%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 21.53%   | 24.68%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 16.06%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 16.06%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.21%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.21%   |
| c. Funded percentage   |                          | 85%     |
| 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.) |                          | 3.21%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 12.85%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 19.27%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 21.53%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (2.26%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 5.60%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 3.34%   |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 19.27%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 15.78%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 15.78%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 19.27%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 15.78%   | 15.60%  |
| b. Tier 1/Tier 2 UAL rate  | 3.34%  | 3.53%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 19.27%   | 19.27%  |



# Data

## Demographic Information

### Employer Valuation Payroll

|                                   | General Service | Police & Fire    | Total            |
|-----------------------------------|-----------------|------------------|------------------|
| Tier 1                            | \$0             | \$0              | \$0              |
| Tier 2                            | 0               | 70,389           | 70,389           |
| Tier 1/Tier 2 valuation payroll   | 0               | 70,389           | 70,389           |
| OPSRP valuation payroll           | 37,767          | 361,672          | 399,439          |
| <b>Combined valuation payroll</b> | <b>\$37,767</b> | <b>\$432,061</b> | <b>\$469,828</b> |

### Employer Member Census

|  | December 31 |          |          |           |          |          |          |           |
|--|-------------|----------|----------|-----------|----------|----------|----------|-----------|
|  | 2017        |          |          |           | 2016     |          |          |           |
|  | Tier 1      | Tier 2   | OPSRP    | Total     | Tier 1   | Tier 2   | OPSRP    | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |           |          |          |          |           |
| General Service  | 0           | 0        | 1        | 1         | 0        | 0        | 0        | 0         |
| Police & Fire  | 0           | 1        | 6        | 7         | 0        | 1        | 7        | 8         |
| Total  | 0           | 1        | 7        | 8         | 0        | 1        | 7        | 8         |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |           |          |          |          |           |
| General Service  | 0           | 0        | N/A      | 0         | 1        | 0        | N/A      | 1         |
| Police & Fire  | 0           | 0        | N/A      | 0         | 0        | 0        | N/A      | 0         |
| Total  | 0           | 0        | N/A      | 0         | 1        | 0        | N/A      | 1         |
| <b>Dormant Members</b>   |             |          |          |           |          |          |          |           |
| General Service  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Police & Fire  | 1           | 0        | 0        | 1         | 1        | 0        | 0        | 1         |
| Total  | 1           | 0        | 0        | 1         | 1        | 0        | 0        | 1         |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |           |          |          |          |           |
| General Service  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Police & Fire  | 6           | 0        | 2        | 8         | 6        | 0        | 1        | 7         |
| Total  | 6           | 0        | 2        | 8         | 6        | 0        | 1        | 7         |
| <b>Grand Total Number of Members</b>                                   | <b>7</b>    | <b>1</b> | <b>9</b> | <b>17</b> | <b>8</b> | <b>1</b> | <b>8</b> | <b>17</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          | 1        |          |          |          |          |          |          | 1        |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             | 2        | 2,064                   |
| 35-39           |          |                                  | 60-64                             | 3        | 2,033                   |
| 40-44           |          |                                  | 65-69                             | 1        | 167                     |
| 45-49           |          |                                  | 70-74                             |          |                         |
| 50-54           | 1        | 1,886                            | 75-79                             |          |                         |
| 55-59           |          |                                  | 80-84                             |          |                         |
| 60-64           |          |                                  | 85-89                             |          |                         |
| 65-69           |          |                                  | 90-94                             |          |                         |
| 70-74           |          |                                  | 95-99                             |          |                         |
| 75+             |          |                                  | 100+                              |          |                         |
| <b>Total</b>    | <b>1</b> | <b>1,886</b>                     | <b>Total</b>                      | <b>6</b> | <b>1,732</b>            |

# 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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October 2018

Jefferson County Soil & Water Conservation District/2841  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018

Jefferson County Soil & Water Conservation District/2841

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.



October 2018  
Jefferson County Soil & Water Conservation District/2841

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**

**INDEPENDENT EMPLOYERS**

**Jefferson County Soil & Water Conservation District -- #2841**

**October 2018**

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## Executive Summary

Milliman has prepared this report for Jefferson County Soil & Water Conservation District to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Jefferson County Soil & Water Conservation District.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Jefferson County Soil & Water Conservation District***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 10.83%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 1.67%         | 1.67%           | 1.67%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>13.95%</b> | <b>11.52%</b>   | <b>16.15%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>14.01%</b> | <b>11.52%</b>   | <b>16.15%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 83%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 12.50%             | 12.50%                        |
| Minimum 2021-2023 Rate                                       | 9.50%              | 6.50%                         |
| Maximum 2021-2023 Rate                                       | 15.50%             | 18.50%                        |

# 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               | \$147,933                     | \$162,410                             | \$14,477             | 91%                  | \$185,702           | 8%  |
| 12/31/2013               | 167,632                       | 175,485                               | 7,853                | 96%                  | 111,298             | 7%  |
| 12/31/2014               | 174,278                       | 208,639                               | 34,361               | 84%                  | 191,735             | 18%   |
| 12/31/2015               | 174,898                       | 225,571                               | 50,673               | 78%                  | 202,093             | 25%   |
| 12/31/2016               | 188,344                       | 293,669                               | 105,325              | 64%                  | 236,690             | 44%   |
| 12/31/2017               | 221,662                       | 266,268                               | 44,606               | 83%                  | 228,341             | 20%   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### ***Jefferson County Soil & Water Conservation District***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$44,606                  | \$105,325         |
| Allocated pooled OPSRP UAL                       | 34,409                    | 40,749            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 79,015                    | 146,074           |
| Combined valuation payroll                       | 228,341                   | 236,690           |
| Net pension UAL as a percentage of payroll       | 35%                       | 62%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$2,616)                 | (\$32)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$7,381                   | \$8,432           |
| Tier 1/Tier 2 valuation payroll                                  | 68,169                    | 84,254            |
| Tier 1/Tier 2 pension normal cost rate                           | 10.83%                    | 10.01%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$266,268                 | \$293,669         |
| Actuarial asset value  | 221,662                   | 188,344           |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 44,606                    | 105,325           |
| Tier 1/ Tier 2 Funded status                                     | 83%                       | 64%               |
| Combined valuation payroll                                       | \$228,341                 | \$236,690         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 20%                       | 45%               |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 1.67%                     | 3.36%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 1                         | 1                 |
| Tier 1/Tier 2 dormant members                                    | 0                         | 0                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 1                         | 1                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 228,341           | 236,690           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$25,052          | \$20,920          |
| 2. Employer reserves                                  | 160,552           | 132,502           |
| 3. Benefits in force reserve                          | 36,058            | 34,922            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$221,662</b>  | <b>\$188,344</b>  |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$188,344                                 |
| 2. Regular employer contributions   | 6,793                                     |
| 3. Benefit payments and expenses  | (6,717)                                   |
| 4. Adjustments <sup>1</sup>   | 2,946                                     |
| 5. Interest credited  | 30,296                                    |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$221,662</b>                          |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 7,381             | 8,432             |
| <b>Total</b>           | <b>\$7,381</b>    | <b>\$8,432</b>    |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$7,381        | \$7,381       | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### ***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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$0               | \$0               |
| ▪ Tier 1 General Service                 | 0                 | 0                 |
| ▪ Tier 2 Police & Fire                   | 0                 | 0                 |
| ▪ Tier 2 General Service                 | 184,593           | 211,194           |
| ▪ <b>Total Active Members</b>            | <b>\$184,593</b>  | <b>\$211,194</b>  |
| Dormant Members                          | 0                 | 0                 |
| Retired Members and Beneficiaries        | 81,675            | 82,475            |
| <b>Total Actuarial Accrued Liability</b> | <b>\$266,268</b>  | <b>\$293,669</b>  |

### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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 | \$266,268      | \$266,268     | \$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  | \$266,268         | \$293,669         |
| 2. Actuarial value of assets  | 221,662           | 188,344           |
| 3. Unfunded accrued liability (1. – 2.)                                       | 44,606            | 105,325           |
| 4. Funded percentage (2. ÷ 1.)  | 83%               | 64%               |
| 5. Combined valuation payroll   | \$228,341         | \$236,690         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 20%               | 45%               |

#### 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<br>December 31, 2016 | Payment | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|---------|----------|--------------------------|------------------------|
| December 31, 2013 | \$7,801                  | \$618   | \$538    | \$7,721                  | \$640                  |
| December 31, 2015 | \$42,815                 | \$3,133 | \$2,962  | \$42,644                 | \$3,243                |
| December 31, 2017 | N/A                      | N/A     | N/A      | (\$5,759)                | (\$407)                |
| <b>Total</b>      |                          |         |          | <b>\$44,606</b>          | <b>\$3,476</b>         |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$293,669       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 7,979           |
| c. Benefit payments during 2017  | (6,665)         |
| d. Interest at 7.20% to December 31, 2017  | 21,191          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 316,174         |
| 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.)               | 316,174         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 266,268         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 49,906          |
| 4. Expected actuarial value of assets  |                 |
| a. Actuarial value of assets at December 31, 2016                                    | 188,344         |
| b. Contributions for 2017 <sup>1</sup>   | 6,793           |
| c. Benefit payments and expenses during 2017   | (6,717)         |
| d. Interest at 7.20% to December 31, 2017  | 13,564          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 201,984         |
| 5. Actuarial value of assets at December 31, 2017                                    | 221,662         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 19,679          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$69,585</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$105,325</b> |
| 2. Expected increase  | 8,866            |
| 3. Liability (gain)/loss  | (49,906)         |
| 4. Asset (gain)/loss  | (19,679)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$44,606</b>  |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 7,381             | 68,169                                   | 10.83%           | 8,432             | 84,254                                   | 10.01%           |
| <b>Total</b>           | <b>\$7,381</b>    | <b>\$68,169</b>                          | <b>10.83%</b>    | <b>\$8,432</b>    | <b>\$84,254</b>                          | <b>10.01%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$44,606          | \$105,325         |
| 2. Next year's Tier 1/Tier 2 UAL payment | 3,476             | 7,614             |
| 3. Combined valuation payroll            | 228,341           | 236,690           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 1.52%             | 3.22%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 10.83%   | 10.01%  |
| b. Tier 1/Tier 2 UAL rate                             | 1.52%  | 3.22%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 12.50%   | 13.37%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |        |
|--|--------------------------|--------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 11.41% |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%  |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 11.41% |
| 4. Size of rate collar   |                          |        |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 2.28%  |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%  |
| c. Funded percentage   |                          | 83%    |
| 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.) |                          | 3.00%  |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 8.41%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 14.41% |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 12.50% |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%  |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 1.52%  |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 1.52%  |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 12.50% |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%  |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%  |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 10.83% |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 10.83% |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 12.50% |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 10.83%   | 10.01%  |
| b. Tier 1/Tier 2 UAL rate  | 1.52%  | 3.22%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 12.50%   | 13.37%  |



# Data

## Demographic Information

### Employer Valuation Payroll

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$0              | \$0           | \$0              |
| Tier 2                            | 68,169           | 0             | 68,169           |
| Tier 1/Tier 2 valuation payroll   | 68,169           | 0             | 68,169           |
| OPSRP valuation payroll           | 160,172          | 0             | 160,172          |
| <b>Combined valuation payroll</b> | <b>\$228,341</b> | <b>\$0</b>    | <b>\$228,341</b> |

### Employer Member Census

|  | December 31 |          |          |          |          |          |          |          |
|--|-------------|----------|----------|----------|----------|----------|----------|----------|
|  | 2017        |          |          |          | 2016     |          |          |          |
|  | Tier 1      | Tier 2   | OPSRP    | Total    | Tier 1   | Tier 2   | OPSRP    | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |          |          |          |          |          |
| General Service  | 0           | 1        | 3        | 4        | 0        | 1        | 3        | 4        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 1        | 3        | 4        | 0        | 1        | 3        | 4        |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Police & Fire  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Total  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| <b>Dormant Members</b>   |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |          |          |          |          |          |
| General Service  | 0           | 1        | 1        | 2        | 0        | 1        | 1        | 2        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 1        | 1        | 2        | 0        | 1        | 1        | 2        |
| <b>Grand Total Number of Members</b>                                   | <b>0</b>    | <b>2</b> | <b>4</b> | <b>6</b> | <b>0</b> | <b>2</b> | <b>4</b> | <b>6</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             |          |                         |
| 35-39           |       |                                  | 60-64                             |          |                         |
| 40-44           |       |                                  | 65-69                             |          |                         |
| 45-49           |       |                                  | 70-74                             | 1        | 663                     |
| 50-54           |       |                                  | 75-79                             |          |                         |
| 55-59           |       |                                  | 80-84                             |          |                         |
| 60-64           |       |                                  | 85-89                             |          |                         |
| 65-69           |       |                                  | 90-94                             |          |                         |
| 70-74           |       |                                  | 95-99                             |          |                         |
| 75+             |       |                                  | 100+                              |          |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      | <b>1</b> | <b>663</b>              |

# 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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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.



October 2018

Jefferson County/2006  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Jefferson County/2006

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.



October 2018  
Jefferson County/2006

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**

**INDEPENDENT EMPLOYERS**

**Jefferson County -- #2006**

**October 2018**

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# Executive Summary

Milliman has prepared this report for Jefferson County to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Jefferson County.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### *Employer Rates Effective July 1, 2019 for Jefferson County*

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 18.11%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 3.59%         | 3.59%           | 3.59%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | (1.24%)       | (1.24%)         | (1.24%)       |
| <b>Net pension contribution rate</b>        | <b>21.91%</b> | <b>12.20%</b>   | <b>16.83%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>21.97%</b> | <b>12.20%</b>   | <b>16.83%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 84%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 21.70%             | 21.70%                        |
| Minimum 2021-2023 Rate                                       | 17.36%             | 13.02%                        |
| Maximum 2021-2023 Rate                                       | 26.04%             | 30.38%                        |

# 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               | \$28,079,743                  | \$30,329,042                          | \$2,249,299          | 93%                  | \$5,795,860         | 39%   |
| 12/31/2013               | 30,314,168                    | 30,961,235                            | 647,067              | 98%                  | 5,612,190           | 12%   |
| 12/31/2014               | 30,949,852                    | 36,202,532                            | 5,252,680            | 85%                  | 6,002,205           | 88%   |
| 12/31/2015               | 30,378,123                    | 37,234,295                            | 6,856,172            | 82%                  | 5,949,011           | 115%  |
| 12/31/2016               | 30,675,054                    | 38,898,207                            | 8,223,153            | 79%                  | 6,040,164           | 136%  |
| 12/31/2017               | 34,810,373                    | 40,051,453                            | 5,241,080            | 87%                  | 6,353,093           | 82%   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### *Jefferson County*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$6,277,733               | \$8,223,153       |
| Allocated pooled OPSRP UAL                       | 957,355                   | 1,039,888         |
| Side account                                     | 1,036,653                 | 0                 |
| Net unfunded pension actuarial accrued liability | 6,198,435                 | 9,263,041         |
| Combined valuation payroll                       | 6,353,093                 | 6,040,164         |
| Net pension UAL as a percentage of payroll       | 98%                       | 153%              |
| Calculated side account rate relief              | (1.24%)                   | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$72,795)                | (\$822)           |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$343,936                 | \$339,398         |
| Tier 1/Tier 2 valuation payroll                                  | 1,899,142                 | 1,872,563         |
| Tier 1/Tier 2 pension normal cost rate                           | 18.11%                    | 18.12%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$40,051,453              | \$38,898,207      |
| Actuarial asset value  | 33,773,720                | 30,675,054        |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 6,277,733                 | 8,223,153         |
| Tier 1/ Tier 2 Funded status                                     | 84%                       | 79%               |
| Combined valuation payroll                                       | \$6,353,093               | \$6,040,164       |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 99%                       | 136%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 3.59%                     | 3.58%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 33                        | 32                |
| Tier 1/Tier 2 dormant members                                    | 58                        | 64                |
| Tier 1/Tier 2 retirees and beneficiaries                         | 205                       | 200               |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

## 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              |
|---|--------------------|------------|--------------------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b>         |            |                    |
| 2. Deposits made during 2017  | 1,000,000          |            | 1,000,000          |
| 3. Administrative expenses  | (1,500)            |            | (1,500)            |
| 4. Amount transferred to employer reserves during 2017                            | (33,598)           |            | (33,598)           |
| 5. Side account earnings during 2017  | 71,751             |            | 71,751             |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> | <b>\$1,036,653</b> |            | <b>\$1,036,653</b> |

# Side Account Information

## Side Account Balances

|                | December 31, 2017  | December 31, 2016 |
|----------------|--------------------|-------------------|
| Side account 1 | \$1,036,653        | \$0               |
| Side account 2 | 0                  | 0                 |
| Side account 3 | 0                  | 0                 |
| <b>Total</b>   | <b>\$1,036,653</b> | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$1,036,653       | \$0               |
| 2. Combined valuation payroll                                 | 6,353,093         | 6,040,164         |
| 3. Average Amortization factor                                | 13.151            | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>(1.24%)</b>    | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017   | December 31, 2016   |
|---|---------------------|---------------------|
| 1. Member reserves                                    | \$4,664,644         | \$4,553,963         |
| 2. Employer reserves                                  | 18,593,997          | 16,356,455          |
| 3. Benefits in force reserve                          | 10,515,079          | 9,764,636           |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$33,773,720</b> | <b>\$30,675,054</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$30,675,054                              |
| 2. Regular employer contributions   | 323,729                                   |
| 3. Benefit payments and expenses  | (1,958,702)                               |
| 4. Adjustments <sup>1</sup>   | 388,222                                   |
| 5. Interest credited  | 4,311,818                                 |
| 6. Total transferred from side accounts   | 33,598                                    |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$33,773,720</b>                       |

<sup>1</sup> 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.

## Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$24,530          | \$41,300          |
| Tier 1 General Service | 93,066            | 101,668           |
| Tier 2 Police & Fire   | 135,371           | 102,042           |
| Tier 2 General Service | 90,969            | 94,388            |
| <b>Total</b>           | <b>\$343,936</b>  | <b>\$339,398</b>  |

#### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$343,936      | \$343,936     | \$0        |



## Tier 1/Tier 2 Valuation Results

### Liabilities

#### ***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.

#### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017   | December 31, 2016   |
|--|---------------------|---------------------|
| Active Members                           |                     |                     |
| ▪ Tier 1 Police & Fire                   | \$1,396,907         | \$1,396,977         |
| ▪ Tier 1 General Service                 | 5,516,756           | 5,673,168           |
| ▪ Tier 2 Police & Fire                   | 2,731,111           | 2,148,056           |
| ▪ Tier 2 General Service                 | 2,992,081           | 3,110,658           |
| ▪ <b>Total Active Members</b>            | <b>\$12,636,855</b> | <b>\$12,328,859</b> |
| Dormant Members                          | 3,596,957           | 3,508,697           |
| Retired Members and Beneficiaries        | 23,817,641          | 23,060,651          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$40,051,453</b> | <b>\$38,898,207</b> |

#### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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

|                             | Before<br>Changes | After<br>Changes | Net<br>Change |
|-----------------------------|-------------------|------------------|---------------|
| Actuarial Accrued Liability | \$40,051,453      | \$40,051,453     | \$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  | \$40,051,453      | \$38,898,207      |
| 2. Actuarial value of assets  | 33,773,720        | 30,675,054        |
| 3. Unfunded accrued liability (1. – 2.)                                       | 6,277,733         | 8,223,153         |
| 4. Funded percentage (2. ÷ 1.)  | 84%               | 79%               |
| 5. Combined valuation payroll   | \$6,353,093       | \$6,040,164       |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 99%               | 136%              |

#### 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<br>December 31, 2016 | Payment   | Interest  | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|-----------|-----------|--------------------------|------------------------|
| December 31, 2013 | \$642,778                | \$50,941  | \$44,325  | \$636,162                | \$52,724               |
| December 31, 2015 | \$6,208,055              | \$454,270 | \$429,546 | \$6,183,331              | \$470,180              |
| December 31, 2017 | N/A                      | N/A       | N/A       | (\$541,760)              | (\$38,252)             |
| <b>Total</b>      |                          |           |           | <b>\$6,277,733</b>       | <b>\$484,652</b>       |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$38,898,207       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 321,249            |
| c. Benefit payments during 2017  | (1,943,593)        |
| d. Interest at 7.20% to December 31, 2017  | 2,742,267          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 40,018,130         |
| 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.)               | 40,018,130         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 40,051,453         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (33,323)           |
| 4. Expected actuarial value of assets  |                    |
| a. Actuarial value of assets at December 31, 2016                                    | 30,675,054         |
| b. Contributions for 2017 <sup>1</sup>   | 357,327            |
| c. Benefit payments and expenses during 2017   | (1,958,702)        |
| d. Interest at 7.20% to December 31, 2017  | 2,150,954          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 31,224,634         |
| 5. Actuarial value of assets at December 31, 2017                                    | 33,773,720         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 2,549,086          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$2,515,763</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                    |
|---|--------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$8,223,153</b> |
| 2. Expected increase  | 570,343            |
| 3. Liability (gain)/loss  | 33,323             |
| 4. Asset (gain)/loss  | (2,549,086)        |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                  |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$6,277,733</b> |

<sup>1</sup> Includes rate relief from side accounts.

## Tier 1/Tier 2 Valuation Results

### Contribution Rate Development

#### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

#### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017 |   |                        | December 31, 2016 |   |                        |
|------------------------|-------------------|---|------------------------|-------------------|---|------------------------|
|                        | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$24,530          | \$93,021  | 26.37%                 | \$41,300          | \$151,620   | 27.24%                 |
| Tier 1 General Service | 93,066            | 532,505   | 17.48%                 | 101,668           | 573,085   | 17.74%                 |
| Tier 2 Police & Fire   | 135,371           | 623,818   | 21.70%                 | 102,042           | 463,499   | 22.02%                 |
| Tier 2 General Service | 90,969            | 649,798   | 14.00%                 | 94,388            | 684,359   | 13.79%                 |
| <b>Total</b>           | <b>\$343,936</b>  | <b>\$1,899,142</b>                                | <b>18.11%</b>          | <b>\$339,398</b>  | <b>\$1,872,563</b>                                | <b>18.12%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$6,277,733       | \$8,223,153       |
| 2. Next year's Tier 1/Tier 2 UAL payment | 484,652           | 602,106           |
| 3. Combined valuation payroll            | 6,353,093         | 6,040,164         |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 7.63%             | 9.97%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 18.11%   | 18.12%  |
| b. Tier 1/Tier 2 UAL rate                             | 7.63%  | 9.97%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 25.89%   | 28.23%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 16.86%  |
| 2. Employer contribution rate attributable to side accounts  |                          | (1.22%) |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 18.08%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.62%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.62%   |
| c. Funded percentage   |                          | 84%     |
| 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.) |                          | 3.62%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 14.46%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 21.70%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 25.89%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (4.19%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 7.63%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 3.44%   |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 21.70%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 18.11%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 18.11%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 21.70%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 18.11%   | 18.12%  |
| b. Tier 1/Tier 2 UAL rate  | 3.44%  | 3.44%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 21.70%   | 21.70%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service    | Police & Fire      | Total              |
|-----------------------------------|--------------------|--------------------|--------------------|
| Tier 1                            | \$532,505          | \$93,021           | \$625,526          |
| Tier 2                            | 649,798            | 623,818            | 1,273,616          |
| Tier 1/Tier 2 valuation payroll   | 1,182,303          | 716,839            | 1,899,142          |
| OPSRP valuation payroll           | 2,829,735          | 1,624,216          | 4,453,951          |
| <b>Combined valuation payroll</b> | <b>\$4,012,038</b> | <b>\$2,341,055</b> | <b>\$6,353,093</b> |

### *Employer Member Census*

|  | December 31 |            |            |            |            |            |            |            |
|--|-------------|------------|------------|------------|------------|------------|------------|------------|
|  | 2017        |            |            |            | 2016       |            |            |            |
|  | Tier 1      | Tier 2     | OPSRP      | Total      | Tier 1     | Tier 2     | OPSRP      | Total      |
| <b>Active Members <sup>1</sup></b>                                     |             |            |            |            |            |            |            |            |
| General Service  | 9           | 13         | 54         | 76         | 9          | 13         | 54         | 76         |
| Police & Fire  | 2           | 9          | 30         | 41         | 3          | 7          | 27         | 37         |
| Total  | 11          | 22         | 84         | 117        | 12         | 20         | 81         | 113        |
| <b>Active Members with previous service segments with the employer</b> |             |            |            |            |            |            |            |            |
| General Service  | 25          | 29         | N/A        | 54         | 29         | 33         | N/A        | 62         |
| Police & Fire  | 5           | 15         | N/A        | 20         | 4          | 15         | N/A        | 19         |
| Total  | 30          | 44         | N/A        | 74         | 33         | 48         | N/A        | 81         |
| <b>Dormant Members</b>   |             |            |            |            |            |            |            |            |
| General Service  | 16          | 31         | 14         | 61         | 20         | 33         | 17         | 70         |
| Police & Fire  | 4           | 7          | 7          | 18         | 4          | 7          | 7          | 18         |
| Total  | 20          | 38         | 21         | 79         | 24         | 40         | 24         | 88         |
| <b>Retired Members and Beneficiaries</b>                               |             |            |            |            |            |            |            |            |
| General Service  | 127         | 29         | 6          | 162        | 122        | 30         | 4          | 156        |
| Police & Fire  | 46          | 3          | 2          | 51         | 44         | 4          | 1          | 49         |
| Total  | 173         | 32         | 8          | 213        | 166        | 34         | 5          | 205        |
| <b>Grand Total Number of Members</b>                                   | <b>234</b>  | <b>136</b> | <b>113</b> | <b>483</b> | <b>235</b> | <b>142</b> | <b>110</b> | <b>487</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          | 1        |           |           |          |          |          |          | 1         |
| 40-44        |                  |          | 2        | 1         | 1         |          |          |          |          | 4         |
| 45-49        |                  |          |          |           | 4         |          |          |          |          | 4         |
| 50-54        |                  |          | 2        | 3         | 1         |          | 1        |          |          | 7         |
| 55-59        |                  |          | 1        | 3         | 2         | 1        | 1        |          |          | 8         |
| 60-64        |                  |          | 1        | 2         | 1         | 1        |          |          |          | 5         |
| 65-69        |                  |          |          | 2         | 1         |          |          |          |          | 3         |
| 70-74        |                  | 1        |          |           |           |          |          |          |          | 1         |
| 75+          |                  |          |          |           |           |          |          |          |          |           |
| <b>Total</b> | <b>0</b>         | <b>1</b> | <b>7</b> | <b>11</b> | <b>10</b> | <b>2</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>33</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |           |                                  | Retired Members and Beneficiaries |            |                         |
|-----------------|-----------|----------------------------------|-----------------------------------|------------|-------------------------|
| Age             | Count     | Average Deferred Monthly Benefit | Age                               | Count      | Average Monthly Benefit |
| <20             |           |                                  | <45                               | 2          | 61                      |
| 20-24           |           |                                  | 45-49                             | 1          | 3                       |
| 25-29           |           |                                  | 50-54                             | 6          | 685                     |
| 30-34           |           |                                  | 55-59                             | 10         | 1,045                   |
| 35-39           | 1         | 247                              | 60-64                             | 38         | 761                     |
| 40-44           | 5         | 541                              | 65-69                             | 52         | 915                     |
| 45-49           | 8         | 344                              | 70-74                             | 39         | 680                     |
| 50-54           | 10        | 1,043                            | 75-79                             | 27         | 473                     |
| 55-59           | 11        | 706                              | 80-84                             | 20         | 804                     |
| 60-64           | 8         | 304                              | 85-89                             | 6          | 913                     |
| 65-69           | 8         | 351                              | 90-94                             | 3          | 347                     |
| 70-74           | 4         | 144                              | 95-99                             | 1          | 311                     |
| 75+             | 3         | 185                              | 100+                              |            |                         |
| <b>Total</b>    | <b>58</b> | <b>522</b>                       | <b>Total</b>                      | <b>205</b> | <b>748</b>              |

## 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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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.



October 2018

Juntura Road District #4/2809  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Juntura Road District #4/2809

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.



October 2018  
Juntura Road District #4/2809

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**

**INDEPENDENT EMPLOYERS**

**Juntura Road District #4 -- #2809**

**October 2018**

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# Executive Summary

Milliman has prepared this report for Juntura Road District #4 to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Juntura Road District #4.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Juntura Road District #4***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 16.92%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 13.00%        | 13.00%          | 13.00%        |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>31.37%</b> | <b>22.85%</b>   | <b>27.48%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>31.43%</b> | <b>22.85%</b>   | <b>27.48%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 21%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 29.92%             | 29.92%                        |
| Minimum 2021-2023 Rate                                       | 23.94%             | 17.96%                        |
| Maximum 2021-2023 Rate                                       | 35.90%             | 41.88%                        |

# 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               | \$20,456                      | \$48,501                              | \$28,045             | 42%                  | \$0                 | 0%  |
| 12/31/2013               | 20,534                        | 48,614                                | 28,080               | 42%                  | 0                   | 0%  |
| 12/31/2014               | 17,797                        | 54,556                                | 36,759               | 33%                  | 0                   | 0%  |
| 12/31/2015               | 14,685                        | 54,440                                | 39,755               | 27%                  | 0                   | 0%  |
| 12/31/2016               | 12,409                        | 55,920                                | 43,511               | 22%                  | 0                   | 0%  |
| 12/31/2017               | 11,600                        | 55,640                                | 44,040               | 21%                  | 27,339              | 161%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Juntura Road District #4***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$44,040                  | N/A               |
| Allocated pooled OPSRP UAL                       | 190                       | N/A               |
| Side account                                     | 0                         | N/A               |
| Net unfunded pension actuarial accrued liability | 44,230                    | N/A               |
| Combined valuation payroll                       | 27,339                    | N/A               |
| Net pension UAL as a percentage of payroll       | 162%                      | N/A               |
| Calculated side account rate relief              | 0.00%                     | N/A               |
| Allocated pooled RHIA UAL                        | (\$14)                    | N/A               |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$0                       | N/A               |
| Tier 1/Tier 2 valuation payroll                                  | 0                         | N/A               |
| Tier 1/Tier 2 pension normal cost rate                           | 16.92%                    | N/A               |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$55,640                  | N/A               |
| Actuarial asset value  | 11,600                    | N/A               |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 44,040                    | N/A               |
| Tier 1/ Tier 2 Funded status                                     | 21%                       | N/A               |
| Combined valuation payroll                                       | \$27,339                  | N/A               |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 161%                      | N/A               |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 13.00%                    | N/A               |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 0                         | N/A               |
| Tier 1/Tier 2 dormant members                                    | 0                         | N/A               |
| Tier 1/Tier 2 retirees and beneficiaries                         | 2                         | N/A               |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 27,339            | 0                 |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$0               | \$0               |
| 2. Employer reserves                                  | (12,964)          | (11,270)          |
| 3. Benefits in force reserve                          | 24,564            | 23,678            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$11,600</b>   | <b>\$12,409</b>   |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$12,409                                  |
| 2. Regular employer contributions   | 42  |
| 3. Benefit payments and expenses  | (4,576)                                   |
| 4. Adjustments <sup>1</sup>   | 2,256                                     |
| 5. Interest credited  | 1,468                                     |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$11,600</b>                           |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$0</b>        | <b>\$0</b>        |

### Change in Tier 1/Tier 2 Normal Cost

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$0            | \$0           | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$0               | \$0               |
| ▪ Tier 1 General Service                 | 0                 | 0                 |
| ▪ Tier 2 Police & Fire                   | 0                 | 0                 |
| ▪ Tier 2 General Service                 | 0                 | 0                 |
| ▪ <b>Total Active Members</b>            | <b>\$0</b>        | <b>\$0</b>        |
| Dormant Members                          | 0                 | 0                 |
| Retired Members and Beneficiaries        | 55,640            | 55,920            |
| <b>Total Actuarial Accrued Liability</b> | <b>\$55,640</b>   | <b>\$55,920</b>   |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$55,640       | \$55,640      | \$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   | \$55,640          | N/A               |
| 2. Actuarial value of assets   | 11,600            | N/A               |
| 3. Unfunded accrued liability (1. – 2.)                                    | 44,040            | N/A               |
| 4. Funded percentage (2. ÷ 1.)   | 21%               | N/A               |
| 5. Combined valuation payroll  | \$27,339          | N/A               |
| 6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.) | 161%              | N/A               |

### 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<br>December 31, 2016 | Payment | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|---------|----------|--------------------------|------------------------|
| December 31, 2013 | \$27,893                 | \$2,211 | \$1,923  | \$27,605                 | \$2,288                |
| December 31, 2015 | \$11,694                 | \$856   | \$809    | \$11,647                 | \$886                  |
| December 31, 2017 | N/A                      | N/A     | N/A      | \$4,788                  | \$338                  |
| <b>Total</b>      |                          |         |          | <b>\$44,040</b>          | <b>\$3,512</b>         |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$55,920       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 0              |
| c. Benefit payments during 2017  | (4,540)        |
| d. Interest at 7.20% to December 31, 2017  | 3,863          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 55,243         |
| 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.)               | 55,243         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 55,640         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (397)          |
| 4. Expected actuarial value of assets  |                |
| a. Actuarial value of assets at December 31, 2016                                    | 12,409         |
| b. Contributions for 2017 <sup>1</sup>   | 42             |
| c. Benefit payments and expenses during 2017   | (4,576)        |
| d. Interest at 7.20% to December 31, 2017  | 730            |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 8,606          |
| 5. Actuarial value of assets at December 31, 2017                                    | 11,600         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 2,994          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$2,597</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                 |
|---|-----------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$43,511</b> |
| 2. Expected increase  | 3,126           |
| 3. Liability (gain)/loss  | 397             |
| 4. Asset (gain)/loss  | (2,994)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0               |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$44,040</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| <b>Total</b>           | <b>\$0</b>        | <b>\$0</b>                               | <b>16.92%</b>    | <b>\$0</b>        | <b>\$0</b>                               | <b>16.95%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$44,040          | N/A               |
| 2. Next year's Tier 1/Tier 2 UAL payment | 3,512             | N/A               |
| 3. Combined valuation payroll            | 27,339            | N/A               |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 12.85%            | N/A               |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 16.92%   | N/A   |
| b. Tier 1/Tier 2 UAL rate                             | 12.85%   | N/A   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | N/A   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 29.92%   | N/A   |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |        |
|--|--------------------------|--------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 29.92% |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%  |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 29.92% |
| 4. Size of rate collar   |                          |        |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | N/A    |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | N/A    |
| c. Funded percentage   |                          | N/A    |
| 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.) |                          | N/A    |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | N/A    |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | N/A    |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | N/A    |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | N/A    |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | N/A    |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | N/A    |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | N/A    |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | N/A    |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | N/A    |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | N/A    |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | N/A    |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | N/A    |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 16.92%   | N/A   |
| b. Tier 1/Tier 2 UAL rate  | 12.85%   | N/A   |
| c. Multnomah Fire District #10 rate  | 0.15%  | N/A   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 29.92%   | N/A   |



# Data

## Demographic Information

### Employer Valuation Payroll

|                                   | General Service | Police & Fire | Total           |
|-----------------------------------|-----------------|---------------|-----------------|
| Tier 1                            | \$0             | \$0           | \$0             |
| Tier 2                            | 0               | 0             | 0               |
| Tier 1/Tier 2 valuation payroll   | 0               | 0             | 0               |
| OPSRP valuation payroll           | 27,339          | 0             | 27,339          |
| <b>Combined valuation payroll</b> | <b>\$27,339</b> | <b>\$0</b>    | <b>\$27,339</b> |

### Employer Member Census

|  | December 31 |          |          |          |          |          |          |          |
|--|-------------|----------|----------|----------|----------|----------|----------|----------|
|  | 2017        |          |          |          | 2016     |          |          |          |
|  | Tier 1      | Tier 2   | OPSRP    | Total    | Tier 1   | Tier 2   | OPSRP    | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Police & Fire  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Total  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| <b>Dormant Members</b>   |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |          |          |          |          |          |
| General Service  | 2           | 0        | 0        | 2        | 2        | 0        | 0        | 2        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 2           | 0        | 0        | 2        | 2        | 0        | 0        | 2        |
| <b>Grand Total Number of Members</b>                                   | <b>2</b>    | <b>0</b> | <b>0</b> | <b>2</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>2</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             |          |                         |
| 35-39           |       |                                  | 60-64                             |          |                         |
| 40-44           |       |                                  | 65-69                             |          |                         |
| 45-49           |       |                                  | 70-74                             | 2        | 197                     |
| 50-54           |       |                                  | 75-79                             |          |                         |
| 55-59           |       |                                  | 80-84                             |          |                         |
| 60-64           |       |                                  | 85-89                             |          |                         |
| 65-69           |       |                                  | 90-94                             |          |                         |
| 70-74           |       |                                  | 95-99                             |          |                         |
| 75+             |       |                                  | 100+                              |          |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      | <b>2</b> | <b>197</b>              |

## 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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October 2018

Klamath County Fire District #1/2515  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Klamath County Fire District #1/2515

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.



October 2018  
Klamath County Fire District #1/2515

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**

**INDEPENDENT EMPLOYERS**

**Klamath County Fire District #1 -- #2515**

**October 2018**

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## Executive Summary

Milliman has prepared this report for Klamath County Fire District #1 to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Klamath County Fire District #1.

### Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

#### ***Employer Rates Effective July 1, 2019 for Klamath County Fire District #1***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 20.11%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 13.16%        | 13.16%          | 13.16%        |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>34.72%</b> | <b>23.01%</b>   | <b>27.64%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>34.78%</b> | <b>23.01%</b>   | <b>27.64%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 67%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 33.27%             | 33.27%                        |
| Minimum 2021-2023 Rate                                       | 26.62%             | 19.97%                        |
| Maximum 2021-2023 Rate                                       | 39.92%             | 46.57%                        |

# 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               | \$30,046,017                  | \$37,192,655                          | \$7,146,638          | 81%                  | \$5,617,966         | 127%  |
| 12/31/2013               | 32,664,639                    | 37,839,742                            | 5,175,103            | 86%                  | 4,890,407           | 106%  |
| 12/31/2014               | 33,469,217                    | 44,744,795                            | 11,275,578           | 75%                  | 5,000,010           | 226%  |
| 12/31/2015               | 32,653,714                    | 47,964,445                            | 15,310,731           | 68%                  | 4,872,201           | 314%  |
| 12/31/2016               | 32,272,221                    | 50,243,327                            | 17,971,106           | 64%                  | 4,948,399           | 363%  |
| 12/31/2017               | 35,324,652                    | 52,428,517                            | 17,103,865           | 67%                  | 4,872,723           | 351%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### ***Klamath County Fire District #1***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$17,103,865              | \$17,971,106      |
| Allocated pooled OPSRP UAL                       | 734,276                   | 851,927           |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 17,838,141                | 18,823,033        |
| Combined valuation payroll                       | 4,872,723                 | 4,948,399         |
| Net pension UAL as a percentage of payroll       | 366%                      | 380%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$55,833)                | (\$674)           |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$341,250                 | \$395,560         |
| Tier 1/Tier 2 valuation payroll                                  | 1,697,213                 | 1,922,797         |
| Tier 1/Tier 2 pension normal cost rate                           | 20.11%                    | 20.57%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$52,428,517              | \$50,243,327      |
| Actuarial asset value  | 35,324,652                | 32,272,221        |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 17,103,865                | 17,971,106        |
| Tier 1/ Tier 2 Funded status                                     | 67%                       | 64%               |
| Combined valuation payroll                                       | \$4,872,723               | \$4,948,399       |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 351%                      | 363%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 13.16%                    | 14.29%            |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 17                        | 19                |
| Tier 1/Tier 2 dormant members                                    | 6                         | 7                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 78                        | 74                |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 4,872,723         | 4,948,399         |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017   | December 31, 2016   |
|---|---------------------|---------------------|
| 1. Member reserves                                    | \$2,163,278         | \$2,824,348         |
| 2. Employer reserves                                  | 15,558,019          | 14,355,739          |
| 3. Benefits in force reserve                          | 17,603,355          | 15,092,133          |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$35,324,652</b> | <b>\$32,272,221</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$32,272,221                              |
| 2. Regular employer contributions   | 607,613                                   |
| 3. Benefit payments and expenses  | (3,279,074)                               |
| 4. Adjustments <sup>1</sup>   | 1,115,986                                 |
| 5. Interest credited  | 4,607,905                                 |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$35,324,652</b>                       |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$173,714         | \$223,877         |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 154,906           | 164,003           |
| Tier 2 General Service | 12,630            | 7,680             |
| <b>Total</b>           | <b>\$341,250</b>  | <b>\$395,560</b>  |

### Change in Tier 1/Tier 2 Normal Cost

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$341,250      | \$341,250     | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### ***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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017   | December 31, 2016   |
|--|---------------------|---------------------|
| Active Members                           |                     |                     |
| ▪ Tier 1 Police & Fire                   | \$7,045,761         | \$8,331,872         |
| ▪ Tier 1 General Service                 | 4,285               | 4,058               |
| ▪ Tier 2 Police & Fire                   | 4,130,315           | 3,974,647           |
| ▪ Tier 2 General Service                 | 204,652             | 166,350             |
| ▪ <b>Total Active Members</b>            | <b>\$11,385,013</b> | <b>\$12,476,927</b> |
| Dormant Members                          | 1,170,253           | 2,124,069           |
| Retired Members and Beneficiaries        | 39,873,251          | 35,642,331          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$52,428,517</b> | <b>\$50,243,327</b> |

### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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 | \$52,428,517   | \$52,428,517  | \$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  | \$52,428,517      | \$50,243,327      |
| 2. Actuarial value of assets  | 35,324,652        | 32,272,221        |
| 3. Unfunded accrued liability (1. – 2.)                                       | 17,103,865        | 17,971,106        |
| 4. Funded percentage (2. ÷ 1.)  | 67%               | 64%               |
| 5. Combined valuation payroll   | \$4,872,723       | \$4,948,399       |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 351%              | 363%              |

#### 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<br>December 31, 2016 | Payment   | Interest  | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|-----------|-----------|--------------------------|------------------------|
| December 31, 2013 | \$5,140,804              | \$407,418 | \$354,502 | \$5,087,888              | \$421,671              |
| December 31, 2015 | \$10,137,088             | \$741,774 | \$701,402 | \$10,096,716             | \$767,753              |
| December 31, 2017 | N/A                      | N/A       | N/A       | \$1,919,261              | \$135,512              |
| <b>Total</b>      |                          |           |           | <b>\$17,103,865</b>      | <b>\$1,324,936</b>     |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$50,243,327       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 374,124            |
| c. Benefit payments during 2017  | (3,253,781)        |
| d. Interest at 7.20% to December 31, 2017  | 3,513,852          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 50,877,522         |
| 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.)               | 50,877,522         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 52,428,517         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (1,550,995)        |
| 4. Expected actuarial value of assets  |                    |
| a. Actuarial value of assets at December 31, 2016                                    | 32,272,221         |
| b. Contributions for 2017 <sup>1</sup>   | 607,613            |
| c. Benefit payments and expenses during 2017   | (3,279,074)        |
| d. Interest at 7.20% to December 31, 2017  | 2,227,427          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 31,828,188         |
| 5. Actuarial value of assets at December 31, 2017                                    | 35,324,652         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 3,496,464          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$1,945,469</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                     |
|---|---------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$17,971,106</b> |
| 2. Expected increase  | 1,078,228           |
| 3. Liability (gain)/loss  | 1,550,995           |
| 4. Asset (gain)/loss  | (3,496,464)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                   |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$17,103,865</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$173,714         | \$762,577                                | 22.78%           | \$223,877         | \$995,658                                | 22.49%           |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 154,906           | 810,437                                  | 19.11%           | 164,003           | 852,200                                  | 19.24%           |
| Tier 2 General Service | 12,630            | 124,199                                  | 10.17%           | 7,680             | 74,939                                   | 10.25%           |
| <b>Total</b>           | <b>\$341,250</b>  | <b>\$1,697,213</b>                       | <b>20.11%</b>    | <b>\$395,560</b>  | <b>\$1,922,797</b>                       | <b>20.57%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$17,103,865      | \$17,971,106      |
| 2. Next year's Tier 1/Tier 2 UAL payment | 1,324,936         | 1,339,350         |
| 3. Combined valuation payroll            | 4,872,723         | 4,948,399         |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 27.19%            | 27.07%            |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 20.11%   | 20.57%  |
| b. Tier 1/Tier 2 UAL rate                             | 27.19%   | 27.07%  |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 47.45%   | 47.78%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |          |
|--|--------------------------|----------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 26.41%   |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%    |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 26.41%   |
| 4. Size of rate collar   |                          |          |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 5.28%    |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 5.28%    |
| c. Funded percentage   |                          | 67%      |
| 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.) |                          | 6.86%    |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 19.55%   |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 33.27%   |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 47.45%   |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (14.18%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 27.19%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 13.01%   |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 33.27%   |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%    |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%    |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 20.11%   |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 20.11%   |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 33.27%   |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 20.11%   | 20.57%  |
| b. Tier 1/Tier 2 UAL rate  | 13.01%   | 14.15%  |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 33.27%   | 34.86%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service  | Police & Fire      | Total              |
|-----------------------------------|------------------|--------------------|--------------------|
| Tier 1                            | \$0              | \$762,577          | \$762,577          |
| Tier 2                            | 124,199          | 810,437            | 934,636            |
| Tier 1/Tier 2 valuation payroll   | 124,199          | 1,573,014          | 1,697,213          |
| OPSRP valuation payroll           | 544,830          | 2,630,680          | 3,175,510          |
| <b>Combined valuation payroll</b> | <b>\$669,029</b> | <b>\$4,203,694</b> | <b>\$4,872,723</b> |

### *Employer Member Census*

|  | December 31 |           |           |            |           |           |           |            |
|--|-------------|-----------|-----------|------------|-----------|-----------|-----------|------------|
|  | 2017        |           |           |            | 2016      |           |           |            |
|  | Tier 1      | Tier 2    | OPSRP     | Total      | Tier 1    | Tier 2    | OPSRP     | Total      |
| <b>Active Members <sup>1</sup></b>                                     |             |           |           |            |           |           |           |            |
| General Service  | 0           | 2         | 12        | 14         | 0         | 1         | 10        | 11         |
| Police & Fire  | 7           | 8         | 31        | 46         | 9         | 9         | 30        | 48         |
| Total  | 7           | 10        | 43        | 60         | 9         | 10        | 40        | 59         |
| <b>Active Members with previous service segments with the employer</b> |             |           |           |            |           |           |           |            |
| General Service  | 1           | 0         | N/A       | 1          | 1         | 0         | N/A       | 1          |
| Police & Fire  | 3           | 10        | N/A       | 13         | 4         | 9         | N/A       | 13         |
| Total  | 4           | 10        | N/A       | 14         | 5         | 9         | N/A       | 14         |
| <b>Dormant Members</b>   |             |           |           |            |           |           |           |            |
| General Service  | 0           | 2         | 2         | 4          | 0         | 2         | 2         | 4          |
| Police & Fire  | 0           | 4         | 1         | 5          | 1         | 4         | 1         | 6          |
| Total  | 0           | 6         | 3         | 9          | 1         | 6         | 3         | 10         |
| <b>Retired Members and Beneficiaries</b>                               |             |           |           |            |           |           |           |            |
| General Service  | 5           | 0         | 0         | 5          | 5         | 0         | 0         | 5          |
| Police & Fire  | 66          | 7         | 1         | 74         | 62        | 7         | 1         | 70         |
| Total  | 71          | 7         | 1         | 79         | 67        | 7         | 1         | 75         |
| <b>Grand Total Number of Members</b>                                   | <b>82</b>   | <b>33</b> | <b>47</b> | <b>162</b> | <b>82</b> | <b>32</b> | <b>44</b> | <b>158</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          | 1        | 1        |          |          |          |          |          | 2         |
| 40-44        |                  |          | 1        | 3        |          |          |          |          |          | 4         |
| 45-49        |                  |          |          | 3        | 3        |          |          |          |          | 6         |
| 50-54        |                  |          |          |          | 1        | 1        |          |          |          | 2         |
| 55-59        |                  |          |          |          |          | 1        |          |          |          | 1         |
| 60-64        |                  |          |          | 1        |          |          | 1        |          |          | 2         |
| 65-69        |                  |          |          |          |          |          |          |          |          |           |
| 70-74        |                  |          |          |          |          |          |          |          |          |           |
| 75+          |                  |          |          |          |          |          |          |          |          |           |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>2</b> | <b>8</b> | <b>4</b> | <b>2</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>17</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             | 5         | 3,926                   |
| 30-34           |          |                                  | 55-59                             | 8         | 2,456                   |
| 35-39           |          |                                  | 60-64                             | 25        | 4,155                   |
| 40-44           | 1        | 665                              | 65-69                             | 14        | 3,398                   |
| 45-49           |          |                                  | 70-74                             | 14        | 2,478                   |
| 50-54           | 3        | 2,103                            | 75-79                             | 4         | 1,385                   |
| 55-59           | 1        | 54                               | 80-84                             | 4         | 243                     |
| 60-64           | 1        | 417                              | 85-89                             | 2         | 2,969                   |
| 65-69           |          |                                  | 90-94                             | 2         | 581                     |
| 70-74           |          |                                  | 95-99                             |           |                         |
| 75+             |          |                                  | 100+                              |           |                         |
| <b>Total</b>    | <b>6</b> | <b>1,241</b>                     | <b>Total</b>                      | <b>78</b> | <b>3,065</b>            |

# 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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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.



October 2018

Knappa Svensen Burnside Rural Fire Protection District/2760  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018

Knappa Svensen Burnside Rural Fire Protection District/2760

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.



October 2018  
Knappa Svensen Burnside Rural Fire Protection District/2760

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**

**INDEPENDENT EMPLOYERS**

**Knappa Svensen Burnside Rural Fire Protection District -- #2760**

**October 2018**

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## Executive Summary

Milliman has prepared this report for Knappa Svensen Burnside Rural Fire Protection District to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Knappa Svensen Burnside Rural Fire Protection District.

### Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

#### ***Employer Rates Effective July 1, 2019 for Knappa Svensen Burnside Rural Fire Protection District***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 19.65%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | (2.29%)       | (2.29%)         | (2.29%)       |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>18.81%</b> | <b>7.56%</b>    | <b>12.19%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>18.87%</b> | <b>7.56%</b>    | <b>12.19%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 80%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 17.36%             | 17.36%                        |
| Minimum 2021-2023 Rate                                       | 13.89%             | 10.42%                        |
| Maximum 2021-2023 Rate                                       | 20.83%             | 24.30%                        |

# 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               | \$385,794                     | \$376,481                             | (\$9,313)            | 102%                 | \$83,896            | (11%)   |
| 12/31/2013               | 446,356                       | 423,729                               | (22,627)             | 105%                 | 87,524              | (26%)   |
| 12/31/2014               | 487,092                       | 558,717                               | 71,625               | 87%                  | 96,567              | 74%   |
| 12/31/2015               | 512,926                       | 631,796                               | 118,870              | 81%                  | 161,233             | 74%   |
| 12/31/2016               | 555,737                       | 679,713                               | 123,976              | 82%                  | 157,677             | 79%   |
| 12/31/2017               | 641,188                       | 804,528                               | 163,340              | 80%                  | 199,130             | 82%   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Knappa Svensen Burnside Rural Fire Protection District***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$163,339                 | \$123,976         |
| Allocated pooled OPSRP UAL                       | 30,007                    | 27,146            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 193,346                   | 151,122           |
| Combined valuation payroll                       | 199,130                   | 157,677           |
| Net pension UAL as a percentage of payroll       | 97%                       | 96%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$2,282)                 | (\$21)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$23,637                  | \$22,197          |
| Tier 1/Tier 2 valuation payroll                                  | 120,281                   | 103,166           |
| Tier 1/Tier 2 pension normal cost rate                           | 19.65%                    | 21.52%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$804,528                 | \$679,713         |
| Actuarial asset value  | 641,189                   | 555,737           |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 163,339                   | 123,976           |
| Tier 1/ Tier 2 Funded status                                     | 80%                       | 82%               |
| Combined valuation payroll                                       | \$199,130                 | \$157,677         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 82%                       | 79%               |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | (2.29%)                   | (4.16%)           |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 1                         | 1                 |
| Tier 1/Tier 2 dormant members                                    | 0                         | 0                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 0                         | 0                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 199,130           | 157,677           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$167,244         | \$154,843         |
| 2. Employer reserves                                  | 473,945           | 400,894           |
| 3. Benefits in force reserve                          | 0                 | 0                 |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$641,189</b>  | <b>\$555,737</b>  |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$555,737                                 |
| 2. Regular employer contributions   | 9,840                                     |
| 3. Benefit payments and expenses  | 0   |
| 4. Adjustments <sup>1</sup>   | 496                                       |
| 5. Interest credited  | 75,116                                    |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$641,189</b>                          |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$23,637          | \$22,197          |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$23,637</b>   | <b>\$22,197</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$23,637       | \$23,637      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$804,528         | \$679,713         |
| ▪ Tier 1 General Service                 | 0                 | 0                 |
| ▪ Tier 2 Police & Fire                   | 0                 | 0                 |
| ▪ Tier 2 General Service                 | 0                 | 0                 |
| ▪ <b>Total Active Members</b>            | <b>\$804,528</b>  | <b>\$679,713</b>  |
| Dormant Members                          | 0                 | 0                 |
| Retired Members and Beneficiaries        | 0                 | 0                 |
| <b>Total Actuarial Accrued Liability</b> | <b>\$804,528</b>  | <b>\$679,713</b>  |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$804,528      | \$804,528     | \$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  | \$804,528         | \$679,713         |
| 2. Actuarial value of assets  | 641,189           | 555,737           |
| 3. Unfunded accrued liability (1. – 2.)                                       | 163,339           | 123,976           |
| 4. Funded percentage (2. ÷ 1.)  | 80%               | 82%               |
| 5. Combined valuation payroll   | \$199,130         | \$157,677         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 82%               | 79%               |

#### 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<br>December 31, 2016 | Payment   | Interest  | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|-----------|-----------|--------------------------|------------------------|
| December 31, 2013 | (\$22,476)               | (\$1,781) | (\$1,550) | (\$22,245)               | (\$1,844)              |
| December 31, 2015 | \$141,444                | \$10,350  | \$9,787   | \$140,881                | \$10,713               |
| December 31, 2017 | N/A                      | N/A       | N/A       | \$44,703                 | \$3,156                |
| <b>Total</b>      |                          |           |           | <b>\$163,339</b>         | <b>\$12,025</b>        |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$679,713         |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 21,003            |
| c. Benefit payments during 2017  | 0                 |
| d. Interest at 7.20% to December 31, 2017  | 49,695            |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 750,411           |
| 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.)               | 750,411           |
| 2. Actuarial accrued liability at December 31, 2017                                  | 804,528           |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (54,117)          |
| 4. Expected actuarial value of assets  |                   |
| a. Actuarial value of assets at December 31, 2016                                    | 555,737           |
| b. Contributions for 2017 <sup>1</sup>   | 9,840             |
| c. Benefit payments and expenses during 2017   | 0                 |
| d. Interest at 7.20% to December 31, 2017  | 40,367            |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 605,944           |
| 5. Actuarial value of assets at December 31, 2017                                    | 641,189           |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 35,245            |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>(\$18,872)</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$123,976</b> |
| 2. Expected increase  | 20,491           |
| 3. Liability (gain)/loss  | 54,117           |
| 4. Asset (gain)/loss  | (35,245)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$163,339</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$23,637          | \$120,281                                | 19.65%           | \$22,197          | \$103,166                                | 21.52%           |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| <b>Total</b>           | <b>\$23,637</b>   | <b>\$120,281</b>                         | <b>19.65%</b>    | <b>\$22,197</b>   | <b>\$103,166</b>                         | <b>21.52%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$163,339         | \$123,976         |
| 2. Next year's Tier 1/Tier 2 UAL payment | 12,025            | 8,923             |
| 3. Combined valuation payroll            | 199,130           | 157,677           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 6.04%             | 5.66%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 19.65%   | 21.52%  |
| b. Tier 1/Tier 2 UAL rate                             | 6.04%  | 5.66%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 25.84%   | 27.32%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 14.36%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 14.36%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 2.87%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%   |
| c. Funded percentage   |                          | 80%     |
| 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.) |                          | 3.00%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 11.36%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 17.36%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 25.84%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (8.48%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 6.04%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | (2.44%) |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 17.36%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 19.65%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 19.65%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 17.36%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 19.65%   | 21.52%  |
| b. Tier 1/Tier 2 UAL rate  | (2.44%)  | (4.30%)   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 17.36%   | 17.36%  |



# Data

## Demographic Information

### Employer Valuation Payroll

|                                   | General Service | Police & Fire    | Total            |
|-----------------------------------|-----------------|------------------|------------------|
| Tier 1                            | \$0             | \$120,281        | \$120,281        |
| Tier 2                            | 0               | 0                | 0                |
| Tier 1/Tier 2 valuation payroll   | 0               | 120,281          | 120,281          |
| OPSRP valuation payroll           | 0               | 78,849           | 78,849           |
| <b>Combined valuation payroll</b> | <b>\$0</b>      | <b>\$199,130</b> | <b>\$199,130</b> |

### Employer Member Census

|  | December 31 |          |            |          |          |          |            |          |
|--|-------------|----------|------------|----------|----------|----------|------------|----------|
|  | 2017        |          |            |          | 2016     |          |            |          |
|  | Tier 1      | Tier 2   | OPSRP      | Total    | Tier 1   | Tier 2   | OPSRP      | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |            |          |          |          |            |          |
| General Service  | 0           | 0        | 0          | 0        | 0        | 0        | 0          | 0        |
| Police & Fire  | 1           | 0        | 1          | 2        | 1        | 0        | 1          | 2        |
| <b>Total</b>   | <b>1</b>    | <b>0</b> | <b>1</b>   | <b>2</b> | <b>1</b> | <b>0</b> | <b>1</b>   | <b>2</b> |
| <b>Active Members with previous service segments with the employer</b> |             |          |            |          |          |          |            |          |
| General Service  | 0           | 0        | N/A        | 0        | 0        | 0        | N/A        | 0        |
| Police & Fire  | 0           | 0        | N/A        | 0        | 0        | 0        | N/A        | 0        |
| <b>Total</b>   | <b>0</b>    | <b>0</b> | <b>N/A</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>N/A</b> | <b>0</b> |
| <b>Dormant Members</b>   |             |          |            |          |          |          |            |          |
| General Service  | 0           | 0        | 0          | 0        | 0        | 0        | 0          | 0        |
| Police & Fire  | 0           | 0        | 0          | 0        | 0        | 0        | 0          | 0        |
| <b>Total</b>   | <b>0</b>    | <b>0</b> | <b>0</b>   | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>   | <b>0</b> |
| <b>Retired Members and Beneficiaries</b>                               |             |          |            |          |          |          |            |          |
| General Service  | 0           | 0        | 0          | 0        | 0        | 0        | 0          | 0        |
| Police & Fire  | 0           | 0        | 0          | 0        | 0        | 0        | 0          | 0        |
| <b>Total</b>   | <b>0</b>    | <b>0</b> | <b>0</b>   | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>   | <b>0</b> |
| <b>Grand Total Number of Members</b>                                   | <b>1</b>    | <b>0</b> | <b>1</b>   | <b>2</b> | <b>1</b> | <b>0</b> | <b>1</b>   | <b>2</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          | 1        |          |          |          | 1        |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             |       |                         |
| 35-39           |       |                                  | 60-64                             |       |                         |
| 40-44           |       |                                  | 65-69                             |       |                         |
| 45-49           |       |                                  | 70-74                             |       |                         |
| 50-54           |       |                                  | 75-79                             |       |                         |
| 55-59           |       |                                  | 80-84                             |       |                         |
| 60-64           |       |                                  | 85-89                             |       |                         |
| 65-69           |       |                                  | 90-94                             |       |                         |
| 70-74           |       |                                  | 95-99                             |       |                         |
| 75+             |       |                                  | 100+                              |       |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      |       |                         |

## 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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October 2018

LaGrande Rural Fire Protection District/2879  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
LaGrande Rural Fire Protection District/2879

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.



October 2018  
LaGrande Rural Fire Protection District/2879

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**

**INDEPENDENT EMPLOYERS**

**LaGrande Rural Fire Protection District -- #2879**

**October 2018**

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# Executive Summary

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

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to LaGrande Rural Fire Protection District.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for LaGrande Rural Fire Protection District***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 16.92%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 0.15%         | 0.15%           | 0.15%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>18.52%</b> | <b>10.00%</b>   | <b>14.63%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>18.58%</b> | <b>10.00%</b>   | <b>14.63%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 100%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 17.07%             | 17.07%                        |
| Minimum 2021-2023 Rate                                       | 13.66%             | 10.25%                        |
| Maximum 2021-2023 Rate                                       | 20.48%             | 23.89%                        |

# 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               | \$0                           | \$0                                   | \$0                  | 0%                   | \$0                 | 0%  |
| 12/31/2013               | 0                             | 0                                     | 0                    | 0%                   | 0                   | 0%  |
| 12/31/2014               | (2)                           | 0                                     | 2                    | 0%                   | 75,446              | 0%  |
| 12/31/2015               | (3)                           | 0                                     | 3                    | 0%                   | 91,304              | 0%  |
| 12/31/2016               | 18                            | 0                                     | (18)                 | 0%                   | 85,760              | 0%  |
| 12/31/2017               | (10)                          | 0                                     | 10                   | 0%                   | 114,808             | 0%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***LaGrande Rural Fire Protection District***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$10                      | (\$18)            |
| Allocated pooled OPSRP UAL                       | 17,301                    | 14,765            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 17,311                    | 14,747            |
| Combined valuation payroll                       | 114,808                   | 85,760            |
| Net pension UAL as a percentage of payroll       | 15%                       | 17%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$1,315)                 | (\$12)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$0                       | \$0               |
| Tier 1/Tier 2 valuation payroll                    | 0                         | 0                 |
| Tier 1/Tier 2 pension normal cost rate             | 16.92%                    | 16.95%            |
| Tier 1/ Tier 2 Actuarial accrued liability         | \$0                       | \$0               |
| Actuarial asset value                              | (10)                      | 18                |
| Tier 1/Tier 2 Unfunded actuarial accrued liability | 10                        | (18)              |
| Tier 1/ Tier 2 Funded status                       | 0%                        | 0%                |
| Combined valuation payroll                         | \$114,808                 | \$85,760          |
| Tier 1/Tier 2 UAL as a percentage of payroll       | 0%                        | 0%                |
| Tier 1/Tier 2 UAL rate                             | 0.15%                     | 0.14%             |
| (includes Multnomah Fire District #10)             |                           |                   |
| Tier 1/Tier 2 active members <sup>1</sup>          | 0                         | 0                 |
| Tier 1/Tier 2 dormant members                      | 0                         | 0                 |
| Tier 1/Tier 2 retirees and beneficiaries           | 0                         | 0                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 114,808           | 85,760            |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$0               | \$0               |
| 2. Employer reserves                                  | (10)              | 18                |
| 3. Benefits in force reserve                          | 0                 | 0                 |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>(\$10)</b>     | <b>\$18</b>       |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year  | \$18                                      |
| 2. Regular employer contributions   | 98  |
| 3. Benefit payments and expenses  | 0   |
| 4. Adjustments <sup>1</sup>   | (163)                                     |
| 5. Interest credited  | 37  |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year</b><br><b>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>(\$10)</b>                             |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$0</b>        | <b>\$0</b>        |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$0            | \$0           | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$0               | \$0               |
| ▪ Tier 1 General Service                 | 0                 | 0                 |
| ▪ Tier 2 Police & Fire                   | 0                 | 0                 |
| ▪ Tier 2 General Service                 | 0                 | 0                 |
| ▪ <b>Total Active Members</b>            | <b>\$0</b>        | <b>\$0</b>        |
| Dormant Members                          | 0                 | 0                 |
| Retired Members and Beneficiaries        | 0                 | 0                 |
| <b>Total Actuarial Accrued Liability</b> | <b>\$0</b>        | <b>\$0</b>        |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$0            | \$0           | \$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  | \$0               | \$0               |
| 2. Actuarial value of assets  | (10)              | 18                |
| 3. Unfunded accrued liability (1. – 2.)                                       | 10                | (18)              |
| 4. Funded percentage (2. ÷ 1.)  | 100%              | 100%              |
| 5. Combined valuation payroll   | \$114,808         | \$85,760          |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 0%                | 0%                |

### 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<br>December 31, 2016 | Payment | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|---------|----------|--------------------------|------------------------|
| December 31, 2015 | \$3                      | \$0     | \$0      | \$3                      | \$0                    |
| December 31, 2017 | N/A                      | N/A     | N/A      | \$7                      | \$0                    |
| <b>Total</b>      |                          |         |          | <b>\$10</b>              | <b>\$0</b>             |

## Tier 1/Tier 2 Valuation Results

### Unfunded Accrued Liability (UAL)

#### **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                                  | \$0            |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 0              |
| c. Benefit payments during 2017  | 0              |
| d. Interest at 7.20% to December 31, 2017  | 0              |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 0              |
| 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.)               | 0              |
| 2. Actuarial accrued liability at December 31, 2017                                  | 0              |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 0              |
| 4. Expected actuarial value of assets  |                |
| a. Actuarial value of assets at December 31, 2016                                    | 18             |
| b. Contributions for 2017 <sup>1</sup>   | 98             |
| c. Benefit payments and expenses during 2017   | 0              |
| d. Interest at 7.20% to December 31, 2017  | 5              |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 120            |
| 5. Actuarial value of assets at December 31, 2017                                    | (10)           |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | (130)          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>(\$130)</b> |

#### **Unfunded Accrued Liability Reconciliation**

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

|   |               |
|---|---------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>(\$18)</b> |
| 2. Expected increase  | (102)         |
| 3. Liability (gain)/loss  | 0             |
| 4. Asset (gain)/loss  | 130           |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0             |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$10</b>   |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| <b>Total</b>           | <b>\$0</b>        | <b>\$0</b>                               | <b>16.92%</b>    | <b>\$0</b>        | <b>\$0</b>                               | <b>16.95%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$10              | (\$18)            |
| 2. Next year's Tier 1/Tier 2 UAL payment | 0                 | (1)               |
| 3. Combined valuation payroll            | 114,808           | 85,760            |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 0.00%             | 0.00%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 16.92%   | 16.95%  |
| b. Tier 1/Tier 2 UAL rate                             | 0.00%  | 0.00%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 17.07%   | 17.09%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### **Adjustments Due to Rate Collar and Minimum Rate Requirements**

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |        |
|--|--------------------------|--------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 16.86% |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%  |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 16.86% |
| 4. Size of rate collar   |                          |        |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.37%  |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.37%  |
| c. Funded percentage   |                          | 100%   |
| 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.) |                          | 3.37%  |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 13.49% |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 20.23% |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 17.07% |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%  |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 0.00%  |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 0.00%  |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 17.07% |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%  |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%  |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 16.92% |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 16.92% |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 17.07% |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 16.92%   | 16.95%  |
| b. Tier 1/Tier 2 UAL rate  | 0.00%  | 0.00%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 17.07%   | 17.09%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service | Police & Fire    | Total            |
|-----------------------------------|-----------------|------------------|------------------|
| Tier 1                            | \$0             | \$0              | \$0              |
| Tier 2                            | 0               | 0                | 0                |
| Tier 1/Tier 2 valuation payroll   | 0               | 0                | 0                |
| OPSRP valuation payroll           | 0               | 114,808          | 114,808          |
| <b>Combined valuation payroll</b> | <b>\$0</b>      | <b>\$114,808</b> | <b>\$114,808</b> |

### *Employer Member Census*

|  | December 31 |          |          |          |          |          |          |          |
|--|-------------|----------|----------|----------|----------|----------|----------|----------|
|  | 2017        |          |          |          | 2016     |          |          |          |
|  | Tier 1      | Tier 2   | OPSRP    | Total    | Tier 1   | Tier 2   | OPSRP    | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 1        | 1        | 0        | 0        | 1        | 1        |
| Total  | 0           | 0        | 1        | 1        | 0        | 0        | 1        | 1        |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Police & Fire  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Total  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| <b>Dormant Members</b>   |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Grand Total Number of Members</b>                                   | <b>0</b>    | <b>0</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>1</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             |       |                         |
| 35-39           |       |                                  | 60-64                             |       |                         |
| 40-44           |       |                                  | 65-69                             |       |                         |
| 45-49           |       |                                  | 70-74                             |       |                         |
| 50-54           |       |                                  | 75-79                             |       |                         |
| 55-59           |       |                                  | 80-84                             |       |                         |
| 60-64           |       |                                  | 85-89                             |       |                         |
| 65-69           |       |                                  | 90-94                             |       |                         |
| 70-74           |       |                                  | 95-99                             |       |                         |
| 75+             |       |                                  | 100+                              |       |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      |       |                         |

## 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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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.



October 2018

Lake Chinook Fire and Rescue District/2881  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
Lake Chinook Fire and Rescue District/2881

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.



October 2018  
Lake Chinook Fire and Rescue District/2881

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.

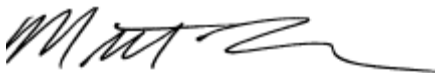
The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.


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, 2017**

## **OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM**

**INDEPENDENT EMPLOYERS**

**Lake Chinook Fire and Rescue District -- #2881**

**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 Lake Chinook Fire and Rescue District to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Lake Chinook Fire and Rescue District.

### Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

#### ***Employer Rates Effective July 1, 2019 for Lake Chinook Fire and Rescue District***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 16.92%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 0.15%         | 0.15%           | 0.15%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>18.52%</b> | <b>10.00%</b>   | <b>14.63%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>18.58%</b> | <b>10.00%</b>   | <b>14.63%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 100%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 17.07%             | 17.07%                        |
| Minimum 2021-2023 Rate                                       | 13.66%             | 10.25%                        |
| Maximum 2021-2023 Rate                                       | 20.48%             | 23.89%                        |

# 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               | \$0                           | \$0                                   | \$0                  | 0%                   | \$0                 | 0%  |
| 12/31/2013               | 0                             | 0                                     | 0                    | 0%                   | 0                   | 0%  |
| 12/31/2014               | (13)                          | 0                                     | 13                   | 0%                   | 35,652              | 0%  |
| 12/31/2015               | (1)                           | 0                                     | 1                    | 0%                   | 37,501              | 0%  |
| 12/31/2016               | 6                             | 0                                     | (6)                  | 0%                   | 42,205              | 0%  |
| 12/31/2017               | 19                            | 0                                     | (19)                 | 100%                 | 41,249              | 0%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### ***Lake Chinook Fire and Rescue District***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | (\$19)                    | (\$6)             |
| Allocated pooled OPSRP UAL                       | 6,216                     | 7,266             |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 6,197                     | 7,260             |
| Combined valuation payroll                       | 41,249                    | 42,205            |
| Net pension UAL as a percentage of payroll       | 15%                       | 17%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$473)                   | (\$6)             |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$0                       | \$0               |
| Tier 1/Tier 2 valuation payroll                                  | 0                         | 0                 |
| Tier 1/Tier 2 pension normal cost rate                           | 16.92%                    | 16.95%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$0                       | \$0               |
| Actuarial asset value  | 19                        | 6                 |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | (19)                      | (6)               |
| Tier 1/ Tier 2 Funded status                                     | 0%                        | 0%                |
| Combined valuation payroll                                       | \$41,249                  | \$42,205          |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 0%                        | 0%                |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 0.15%                     | 0.14%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 0                         | 0                 |
| Tier 1/Tier 2 dormant members                                    | 0                         | 0                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 0                         | 0                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

## Side Account Information

### Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

### 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 41,249            | 42,205            |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | 0.00%             | 0.00%             |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$0               | \$0               |
| 2. Employer reserves                                  | 19                | 6                 |
| 3. Benefits in force reserve                          | 0                 | 0                 |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$19</b>       | <b>\$6</b>        |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$6                                       |
| 2. Regular employer contributions   | 53  |
| 3. Benefit payments and expenses  | 0   |
| 4. Adjustments <sup>1</sup>   | (58)                                      |
| 5. Interest credited  | 18  |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$19</b>                               |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$0</b>        | <b>\$0</b>        |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$0            | \$0           | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$0               | \$0               |
| ▪ Tier 1 General Service                 | 0                 | 0                 |
| ▪ Tier 2 Police & Fire                   | 0                 | 0                 |
| ▪ Tier 2 General Service                 | 0                 | 0                 |
| ▪ <b>Total Active Members</b>            | <b>\$0</b>        | <b>\$0</b>        |
| Dormant Members                          | 0                 | 0                 |
| Retired Members and Beneficiaries        | 0                 | 0                 |
| <b>Total Actuarial Accrued Liability</b> | <b>\$0</b>        | <b>\$0</b>        |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$0            | \$0           | \$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  | \$0               | \$0               |
| 2. Actuarial value of assets  | 19                | 6                 |
| 3. Unfunded accrued liability (1. – 2.)                                       | (19)              | (6)               |
| 4. Funded percentage (2. ÷ 1.)  | 100%              | 100%              |
| 5. Combined valuation payroll   | \$41,249          | \$42,205          |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 0%                | 0%                |

### 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<br>December 31, 2016 | Payment | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|---------|----------|--------------------------|------------------------|
| December 31, 2015 | \$1                      | \$0     | \$0      | \$1                      | \$0                    |
| December 31, 2017 | N/A                      | N/A     | N/A      | (\$20)                   | (\$1)                  |
| <b>Total</b>      |                          |         |          | <b>(\$19)</b>            | <b>(\$1)</b>           |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$0           |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 0             |
| c. Benefit payments during 2017  | 0             |
| d. Interest at 7.20% to December 31, 2017  | 0             |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 0             |
| 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.)               | 0             |
| 2. Actuarial accrued liability at December 31, 2017                                  | 0             |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 0             |
| 4. Expected actuarial value of assets  |               |
| a. Actuarial value of assets at December 31, 2016                                    | 6             |
| b. Contributions for 2017 <sup>1</sup>   | 53            |
| c. Benefit payments and expenses during 2017   | 0             |
| d. Interest at 7.20% to December 31, 2017  | 2             |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 61            |
| 5. Actuarial value of assets at December 31, 2017                                    | 19            |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | (42)          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>(\$42)</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |               |
|---|---------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>(\$6)</b>  |
| 2. Expected increase  | (55)          |
| 3. Liability (gain)/loss  | 0             |
| 4. Asset (gain)/loss  | 42            |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0             |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>(\$19)</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| <b>Total</b>           | <b>\$0</b>        | <b>\$0</b>                               | <b>16.92%</b>    | <b>\$0</b>        | <b>\$0</b>                               | <b>16.95%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | (\$19)            | (\$6)             |
| 2. Next year's Tier 1/Tier 2 UAL payment | (1)               | 0                 |
| 3. Combined valuation payroll            | 41,249            | 42,205            |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 0.00%             | 0.00%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 16.92%   | 16.95%  |
| b. Tier 1/Tier 2 UAL rate                             | 0.00%  | 0.00%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 17.07%   | 17.09%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |        |
|--|--------------------------|--------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 16.86% |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%  |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 16.86% |
| 4. Size of rate collar   |                          |        |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.37%  |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.37%  |
| c. Funded percentage   |                          | 100%   |
| 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.) |                          | 3.37%  |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 13.49% |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 20.23% |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 17.07% |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%  |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 0.00%  |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 0.00%  |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 17.07% |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%  |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%  |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 16.92% |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 16.92% |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 17.07% |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 16.92%   | 16.95%  |
| b. Tier 1/Tier 2 UAL rate  | 0.00%  | 0.00%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 17.07%   | 17.09%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service | Police & Fire   | Total           |
|-----------------------------------|-----------------|-----------------|-----------------|
| Tier 1                            | \$0             | \$0             | \$0             |
| Tier 2                            | 0               | 0               | 0               |
| Tier 1/Tier 2 valuation payroll   | 0               | 0               | 0               |
| OPSRP valuation payroll           | 0               | 41,249          | 41,249          |
| <b>Combined valuation payroll</b> | <b>\$0</b>      | <b>\$41,249</b> | <b>\$41,249</b> |

### *Employer Member Census*

|  | December 31 |          |          |          |          |          |          |          |
|--|-------------|----------|----------|----------|----------|----------|----------|----------|
|  | 2017        |          |          |          | 2016     |          |          |          |
|  | Tier 1      | Tier 2   | OPSRP    | Total    | Tier 1   | Tier 2   | OPSRP    | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 1        | 1        | 0        | 0        | 1        | 1        |
| Total  | 0           | 0        | 1        | 1        | 0        | 0        | 1        | 1        |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Police & Fire  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Total  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| <b>Dormant Members</b>   |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Grand Total Number of Members</b>                                   | <b>0</b>    | <b>0</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>1</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             |       |                         |
| 35-39           |       |                                  | 60-64                             |       |                         |
| 40-44           |       |                                  | 65-69                             |       |                         |
| 45-49           |       |                                  | 70-74                             |       |                         |
| 50-54           |       |                                  | 75-79                             |       |                         |
| 55-59           |       |                                  | 80-84                             |       |                         |
| 60-64           |       |                                  | 85-89                             |       |                         |
| 65-69           |       |                                  | 90-94                             |       |                         |
| 70-74           |       |                                  | 95-99                             |       |                         |
| 75+             |       |                                  | 100+                              |       |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      |       |                         |

## 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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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.



October 2018

Lakeside Water District/2644  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
Lakeside Water District/2644

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.



October 2018  
Lakeside Water District/2644

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**

**INDEPENDENT EMPLOYERS**

**Lakeside Water District -- #2644**

**October 2018**

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# Executive Summary

Milliman has prepared this report for Lakeside Water District to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Lakeside Water District.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Lakeside Water District***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 11.85%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 3.05%         | 3.05%           | 3.05%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>16.35%</b> | <b>12.90%</b>   | <b>17.53%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>16.41%</b> | <b>12.90%</b>   | <b>17.53%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 91%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 14.90%             | 14.90%                        |
| Minimum 2021-2023 Rate                                       | 11.90%             | 8.90%                         |
| Maximum 2021-2023 Rate                                       | 17.90%             | 20.90%                        |

# 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               | \$489,340                     | \$572,638                             | \$83,298             | 85%                  | \$150,540           | 55%   |
| 12/31/2013               | 559,083                       | 602,151                               | 43,068               | 93%                  | 153,024             | 28%   |
| 12/31/2014               | 583,390                       | 706,891                               | 123,501              | 83%                  | 161,166             | 77%   |
| 12/31/2015               | 575,421                       | 724,912                               | 149,491              | 79%                  | 160,366             | 93%   |
| 12/31/2016               | 556,108                       | 669,663                               | 113,555              | 83%                  | 175,115             | 65%   |
| 12/31/2017               | 636,069                       | 701,123                               | 65,054               | 91%                  | 195,958             | 33%   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Lakeside Water District***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$65,054                  | \$113,555         |
| Allocated pooled OPSRP UAL                       | 29,529                    | 30,148            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 94,583                    | 143,703           |
| Combined valuation payroll                       | 195,958                   | 175,115           |
| Net pension UAL as a percentage of payroll       | 48%                       | 82%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$2,245)                 | (\$24)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$11,517                  | \$10,838          |
| Tier 1/Tier 2 valuation payroll                                  | 97,174                    | 92,011            |
| Tier 1/Tier 2 pension normal cost rate                           | 11.85%                    | 11.78%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$701,123                 | \$669,663         |
| Actuarial asset value  | 636,069                   | 556,108           |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 65,054                    | 113,555           |
| Tier 1/ Tier 2 Funded status                                     | 91%                       | 83%               |
| Combined valuation payroll                                       | \$195,958                 | \$175,115         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 33%                       | 65%               |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 3.05%                     | 5.09%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 1                         | 1                 |
| Tier 1/Tier 2 dormant members                                    | 1                         | 1                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 7                         | 7                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 195,958           | 175,115           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$24,196          | \$20,899          |
| 2. Employer reserves                                  | 432,015           | 359,491           |
| 3. Benefits in force reserve                          | 179,859           | 175,718           |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$636,069</b>  | <b>\$556,108</b>  |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$556,108                                 |
| 2. Regular employer contributions   | 14,767                                    |
| 3. Benefit payments and expenses  | (33,503)                                  |
| 4. Adjustments <sup>1</sup>   | 14,104                                    |
| 5. Interest credited  | 84,594                                    |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$636,069</b>                          |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 11,517            | 10,838            |
| <b>Total</b>           | <b>\$11,517</b>   | <b>\$10,838</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$11,517       | \$11,517      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$0               | \$0               |
| ▪ Tier 1 General Service                 | 0                 | 0                 |
| ▪ Tier 2 Police & Fire                   | 0                 | 0                 |
| ▪ Tier 2 General Service                 | 293,727           | 254,680           |
| ▪ <b>Total Active Members</b>            | <b>\$293,727</b>  | <b>\$254,680</b>  |
| Dormant Members                          | 0                 | 0                 |
| Retired Members and Beneficiaries        | 407,396           | 414,983           |
| <b>Total Actuarial Accrued Liability</b> | <b>\$701,123</b>  | <b>\$669,663</b>  |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$701,123      | \$701,123     | \$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  | \$701,123         | \$669,663         |
| 2. Actuarial value of assets  | 636,069           | 556,108           |
| 3. Unfunded accrued liability (1. – 2.)                                       | 65,054            | 113,555           |
| 4. Funded percentage (2. ÷ 1.)  | 91%               | 83%               |
| 5. Combined valuation payroll   | \$195,958         | \$175,115         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 33%               | 65%               |

### 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<br>December 31, 2016 | Payment | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|---------|----------|--------------------------|------------------------|
| December 31, 2013 | \$42,783                 | \$3,391 | \$2,950  | \$42,342                 | \$3,509                |
| December 31, 2015 | \$106,429                | \$7,788 | \$7,364  | \$106,005                | \$8,061                |
| December 31, 2017 | N/A                      | N/A     | N/A      | (\$83,293)               | (\$5,881)              |
| <b>Total</b>      |                          |         |          | <b>\$65,054</b>          | <b>\$5,689</b>         |

## Tier 1/Tier 2 Valuation Results

### Unfunded Accrued Liability (UAL)

#### **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                                  | \$669,663       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 10,255          |
| c. Benefit payments during 2017  | (33,245)        |
| d. Interest at 7.20% to December 31, 2017  | 47,388          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 694,061         |
| 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.)               | 694,061         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 701,123         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (7,062)         |
| 4. Expected actuarial value of assets  |                 |
| a. Actuarial value of assets at December 31, 2016                                    | 556,108         |
| b. Contributions for 2017 <sup>1</sup>   | 14,767          |
| c. Benefit payments and expenses during 2017   | (33,503)        |
| d. Interest at 7.20% to December 31, 2017  | 39,365          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 576,737         |
| 5. Actuarial value of assets at December 31, 2017                                    | 636,069         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 59,332          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$52,270</b> |

#### **Unfunded Accrued Liability Reconciliation**

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$113,555</b> |
| 2. Expected increase  | 3,769            |
| 3. Liability (gain)/loss  | 7,062            |
| 4. Asset (gain)/loss  | (59,332)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$65,054</b>  |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 11,517            | 97,174                                   | 11.85%           | 10,838            | 92,011                                   | 11.78%           |
| <b>Total</b>           | <b>\$11,517</b>   | <b>\$97,174</b>                          | <b>11.85%</b>    | <b>\$10,838</b>   | <b>\$92,011</b>                          | <b>11.78%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$65,054          | \$113,555         |
| 2. Next year's Tier 1/Tier 2 UAL payment | 5,689             | 8,661             |
| 3. Combined valuation payroll            | 195,958           | 175,115           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 2.90%             | 4.95%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 11.85%   | 11.78%  |
| b. Tier 1/Tier 2 UAL rate                             | 2.90%  | 4.95%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 14.90%   | 16.87%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |        |
|--|--------------------------|--------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 15.21% |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%  |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 15.21% |
| 4. Size of rate collar   |                          |        |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.04%  |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.04%  |
| c. Funded percentage   |                          | 91%    |
| 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.) |                          | 3.04%  |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 12.17% |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 18.25% |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 14.90% |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%  |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 2.90%  |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 2.90%  |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 14.90% |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%  |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%  |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 11.85% |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 11.85% |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 14.90% |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 11.85%   | 11.78%  |
| b. Tier 1/Tier 2 UAL rate  | 2.90%  | 4.95%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 14.90%   | 16.87%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$0              | \$0           | \$0              |
| Tier 2                            | 97,174           | 0             | 97,174           |
| Tier 1/Tier 2 valuation payroll   | 97,174           | 0             | 97,174           |
| OPSRP valuation payroll           | 98,784           | 0             | 98,784           |
| <b>Combined valuation payroll</b> | <b>\$195,958</b> | <b>\$0</b>    | <b>\$195,958</b> |

### *Employer Member Census*

|  | December 31 |          |          |           |          |          |          |           |
|--|-------------|----------|----------|-----------|----------|----------|----------|-----------|
|  | 2017        |          |          |           | 2016     |          |          |           |
|  | Tier 1      | Tier 2   | OPSRP    | Total     | Tier 1   | Tier 2   | OPSRP    | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |           |          |          |          |           |
| General Service  | 0           | 1        | 3        | 4         | 0        | 1        | 2        | 3         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Total  | 0           | 1        | 3        | 4         | 0        | 1        | 2        | 3         |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |           |          |          |          |           |
| General Service  | 0           | 0        | N/A      | 0         | 0        | 0        | N/A      | 0         |
| Police & Fire  | 0           | 0        | N/A      | 0         | 0        | 0        | N/A      | 0         |
| Total  | 0           | 0        | N/A      | 0         | 0        | 0        | N/A      | 0         |
| <b>Dormant Members</b>   |             |          |          |           |          |          |          |           |
| General Service  | 0           | 1        | 0        | 1         | 0        | 1        | 0        | 1         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Total  | 0           | 1        | 0        | 1         | 0        | 1        | 0        | 1         |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |           |          |          |          |           |
| General Service  | 5           | 2        | 0        | 7         | 5        | 2        | 0        | 7         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Total  | 5           | 2        | 0        | 7         | 5        | 2        | 0        | 7         |
| <b>Grand Total Number of Members</b>                                   | <b>5</b>    | <b>4</b> | <b>3</b> | <b>12</b> | <b>5</b> | <b>4</b> | <b>2</b> | <b>11</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             |          |                         |
| 35-39           |          |                                  | 60-64                             | 1        | 8                       |
| 40-44           |          |                                  | 65-69                             | 2        | 136                     |
| 45-49           |          |                                  | 70-74                             | 2        | 485                     |
| 50-54           |          |                                  | 75-79                             | 1        | 485                     |
| 55-59           |          |                                  | 80-84                             | 1        | 1,241                   |
| 60-64           | 1        | 0                                | 85-89                             |          |                         |
| 65-69           |          |                                  | 90-94                             |          |                         |
| 70-74           |          |                                  | 95-99                             |          |                         |
| 75+             |          |                                  | 100+                              |          |                         |
| <b>Total</b>    | <b>1</b> | <b>0</b>                         | <b>Total</b>                      | <b>7</b> | <b>425</b>              |

## 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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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.



October 2018

Lane County/2008  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
Lane County/2008

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.



October 2018  
Lane County/2008

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**

**INDEPENDENT EMPLOYERS**

Lane County -- #2008

October 2018

Secondary Employers

2047 Lane County Fair Board

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## Executive Summary

Milliman has prepared this report for Lane County to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Lane County.

### Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

#### *Employer Rates Effective July 1, 2019 for Lane County*

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 15.99%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 4.37%         | 4.37%           | 4.37%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>21.81%</b> | <b>14.22%</b>   | <b>18.85%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>21.87%</b> | <b>14.22%</b>   | <b>18.85%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 77%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 20.36%             | 20.36%                        |
| Minimum 2021-2023 Rate                                       | 16.29%             | 12.22%                        |
| Maximum 2021-2023 Rate                                       | 24.43%             | 28.50%                        |

# 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               | \$550,497,247                 | \$610,507,495                         | \$60,010,248         | 90%                  | \$75,072,561        | 80%   |
| 12/31/2013               | 597,410,846                   | 627,518,523                           | 30,107,676           | 95%                  | 73,750,639          | 41%   |
| 12/31/2014               | 605,171,349                   | 734,035,783                           | 128,864,434          | 82%                  | 77,932,450          | 165%  |
| 12/31/2015               | 583,497,280                   | 751,433,938                           | 167,936,658          | 78%                  | 81,920,691          | 205%  |
| 12/31/2016               | 583,360,503                   | 794,140,140                           | 210,779,637          | 73%                  | 86,709,301          | 243%  |
| 12/31/2017               | 627,079,801                   | 814,863,565                           | 187,783,764          | 77%                  | 87,105,512          | 216%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### ***Lane County***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$187,783,764             | \$210,779,637     |
| Allocated pooled OPSRP UAL                       | 13,126,027                | 14,928,063        |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 200,909,791               | 225,707,700       |
| Combined valuation payroll                       | 87,105,512                | 86,709,301        |
| Net pension UAL as a percentage of payroll       | 231%                      | 260%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$998,072)               | (\$11,806)        |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$5,679,309               | \$6,475,216       |
| Tier 1/Tier 2 valuation payroll                                  | 35,519,344                | 39,566,323        |
| Tier 1/Tier 2 pension normal cost rate                           | 15.99%                    | 16.37%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$814,863,565             | \$794,140,140     |
| Actuarial asset value  | 627,079,801               | 583,360,503       |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 187,783,764               | 210,779,637       |
| Tier 1/ Tier 2 Funded status                                     | 77%                       | 73%               |
| Combined valuation payroll                                       | \$87,105,512              | \$86,709,301      |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 216%                      | 243%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 4.37%                     | 3.99%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 460                       | 534               |
| Tier 1/Tier 2 dormant members                                    | 297                       | 334               |
| Tier 1/Tier 2 retirees and beneficiaries                         | 2,187                     | 2,081             |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 87,105,512        | 86,709,301        |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017    | December 31, 2016    |
|---|----------------------|----------------------|
| 1. Member reserves                                    | \$44,010,420         | \$52,965,838         |
| 2. Employer reserves                                  | 309,435,044          | 286,383,450          |
| 3. Benefits in force reserve                          | 273,634,337          | 244,011,215          |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$627,079,801</b> | <b>\$583,360,503</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$583,360,503                             |
| 2. Regular employer contributions   | 6,497,745                                 |
| 3. Benefit payments and expenses  | (50,971,368)                              |
| 4. Adjustments <sup>1</sup>   | 5,585,715                                 |
| 5. Interest credited  | 82,607,207                                |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$627,079,801</b>                      |

<sup>1</sup> 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.

## Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017  | December 31, 2016  |
|------------------------|--------------------|--------------------|
| Tier 1 Police & Fire   | \$470,978          | \$772,038          |
| Tier 1 General Service | 1,602,933          | 2,079,646          |
| Tier 2 Police & Fire   | 1,593,311          | 1,530,719          |
| Tier 2 General Service | 2,012,087          | 2,092,813          |
| <b>Total</b>           | <b>\$5,679,309</b> | <b>\$6,475,216</b> |

#### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$5,679,309    | \$5,679,309   | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017    | December 31, 2016    |
|--|----------------------|----------------------|
| Active Members                           |                      |                      |
| ▪ Tier 1 Police & Fire                   | \$16,077,939         | \$25,368,942         |
| ▪ Tier 1 General Service                 | 56,948,458           | 67,101,188           |
| ▪ Tier 2 Police & Fire                   | 36,196,202           | 32,555,792           |
| ▪ Tier 2 General Service                 | 49,024,657           | 48,503,668           |
| ▪ <b>Total Active Members</b>            | <b>\$158,247,256</b> | <b>\$173,529,590</b> |
| Dormant Members                          | 36,808,887           | 44,341,556           |
| Retired Members and Beneficiaries        | 619,807,422          | 576,268,994          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$814,863,565</b> | <b>\$794,140,140</b> |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$814,863,565  | \$814,863,565 | \$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  | \$814,863,565     | \$794,140,140     |
| 2. Actuarial value of assets  | 627,079,801       | 583,360,503       |
| 3. Unfunded accrued liability (1. – 2.)                                       | 187,783,764       | 210,779,637       |
| 4. Funded percentage (2. ÷ 1.)  | 77%               | 73%               |
| 5. Combined valuation payroll   | \$87,105,512      | \$86,709,301      |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 216%              | 243%              |

#### 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<br>December 31, 2016 | Payment      | Interest    | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|--------------|-------------|--------------------------|------------------------|
| December 31, 2013 | \$29,908,131             | \$2,370,275  | \$2,062,419 | \$29,600,275             | \$2,453,197            |
| December 31, 2015 | \$137,817,783            | \$10,084,720 | \$9,535,848 | \$137,268,911            | \$10,437,907           |
| December 31, 2017 | N/A                      | N/A          | N/A         | \$20,914,578             | \$1,476,705            |
| <b>Total</b>      |                          |              |             | <b>\$187,783,764</b>     | <b>\$14,367,809</b>    |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$794,140,140       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 6,126,697           |
| c. Benefit payments during 2017  | (50,578,206)        |
| d. Interest at 7.20% to December 31, 2017  | 55,577,836          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 805,266,467         |
| 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.)               | 805,266,467         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 814,863,565         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (9,597,098)         |
| 4. Expected actuarial value of assets  |                     |
| a. Actuarial value of assets at December 31, 2016                                    | 583,360,503         |
| b. Contributions for 2017 <sup>1</sup>   | 6,497,745           |
| c. Benefit payments and expenses during 2017   | (50,971,368)        |
| d. Interest at 7.20% to December 31, 2017  | 40,400,906          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 579,287,785         |
| 5. Actuarial value of assets at December 31, 2017                                    | 627,079,801         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 47,792,016          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$38,194,918</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                      |
|---|----------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$210,779,637</b> |
| 2. Expected increase  | 15,199,045           |
| 3. Liability (gain)/loss  | 9,597,098            |
| 4. Asset (gain)/loss  | (47,792,016)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                    |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$187,783,764</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017  |   |                        | December 31, 2016  |   |                        |
|------------------------|--------------------|---|------------------------|--------------------|---|------------------------|
|                        | Normal Cost        | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost        | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$470,978          | \$2,122,230                                       | 22.19%                 | \$772,038          | \$3,370,912                                       | 22.90%                 |
| Tier 1 General Service | 1,602,933          | 9,193,483   | 17.44%                 | 2,079,646          | 11,559,787  | 17.99%                 |
| Tier 2 Police & Fire   | 1,593,311          | 8,327,129   | 19.13%                 | 1,530,719          | 8,075,260   | 18.96%                 |
| Tier 2 General Service | 2,012,087          | 15,876,502  | 12.67%                 | 2,092,813          | 16,560,364  | 12.64%                 |
| <b>Total</b>           | <b>\$5,679,309</b> | <b>\$35,519,344</b>                               | <b>15.99%</b>          | <b>\$6,475,216</b> | <b>\$39,566,323</b>                               | <b>16.37%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$187,783,764     | \$210,779,637     |
| 2. Next year's Tier 1/Tier 2 UAL payment | 14,367,809        | 15,494,868        |
| 3. Combined valuation payroll            | 87,105,512        | 86,709,301        |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 16.49%            | 17.87%            |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 15.99%   | 16.37%  |
| b. Tier 1/Tier 2 UAL rate                             | 16.49%   | 17.87%  |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 32.63%   | 34.38%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |          |
|--|--------------------------|----------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 16.97%   |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%    |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 16.97%   |
| 4. Size of rate collar   |                          |          |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.39%    |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.39%    |
| c. Funded percentage   |                          | 77%      |
| 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.) |                          | 3.39%    |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 13.58%   |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 20.36%   |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 32.63%   |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (12.27%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 16.49%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 4.22%    |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 20.36%   |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%    |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%    |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 15.99%   |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 15.99%   |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 20.36%   |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates        |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate | 15.99%   | 16.37%  |
| b. Tier 1/Tier 2 UAL rate                          | 4.22%  | 3.85%   |
| c. Multnomah Fire District #10 rate                | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate                | 20.36%   | 20.36%  |
| <i>(a. + b. + c., minimum of 5.94%)</i>            |  |   |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service     | Police & Fire       | Total               |
|-----------------------------------|---------------------|---------------------|---------------------|
| Tier 1                            | \$9,193,483         | \$2,122,230         | \$11,315,713        |
| Tier 2                            | 15,876,502          | 8,327,129           | 24,203,631          |
| Tier 1/Tier 2 valuation payroll   | 25,069,985          | 10,449,359          | 35,519,344          |
| OPSRP valuation payroll           | 44,145,223          | 7,440,944           | 51,586,168          |
| <b>Combined valuation payroll</b> | <b>\$69,215,208</b> | <b>\$17,890,303</b> | <b>\$87,105,512</b> |

### *Employer Member Census*

|  | December 31  |            |              |              |              |            |            |              |
|--|--------------|------------|--------------|--------------|--------------|------------|------------|--------------|
|  | 2017         |            |              |              | 2016         |            |            |              |
|  | Tier 1       | Tier 2     | OPSRP        | Total        | Tier 1       | Tier 2     | OPSRP      | Total        |
| <b>Active Members <sup>1</sup></b>                                     |              |            |              |              |              |            |            |              |
| General Service  | 119          | 232        | 778          | 1,129        | 155          | 255        | 728        | 1,138        |
| Police & Fire  | 20           | 89         | 115          | 224          | 34           | 90         | 79         | 203          |
| Total  | 139          | 321        | 893          | 1,353        | 189          | 345        | 807        | 1,341        |
| <b>Active Members with previous service segments with the employer</b> |              |            |              |              |              |            |            |              |
| General Service  | 105          | 124        | N/A          | 229          | 124          | 139        | N/A        | 263          |
| Police & Fire  | 9            | 32         | N/A          | 41           | 11           | 31         | N/A        | 42           |
| Total  | 114          | 156        | N/A          | 270          | 135          | 170        | N/A        | 305          |
| <b>Dormant Members</b>   |              |            |              |              |              |            |            |              |
| General Service  | 131          | 137        | 111          | 379          | 160          | 143        | 104        | 407          |
| Police & Fire  | 12           | 17         | 10           | 39           | 17           | 14         | 9          | 40           |
| Total  | 143          | 154        | 121          | 418          | 177          | 157        | 113        | 447          |
| <b>Retired Members and Beneficiaries</b>                               |              |            |              |              |              |            |            |              |
| General Service  | 1,708        | 159        | 38           | 1,905        | 1,651        | 134        | 28         | 1,813        |
| Police & Fire  | 296          | 24         | 1            | 321          | 274          | 22         | 1          | 297          |
| Total  | 2,004        | 183        | 39           | 2,226        | 1,925        | 156        | 29         | 2,110        |
| <b>Grand Total Number of Members</b>                                   | <b>2,400</b> | <b>814</b> | <b>1,053</b> | <b>4,267</b> | <b>2,426</b> | <b>828</b> | <b>949</b> | <b>4,203</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          | 6         | 4          |           |           |           |          |          | 10         |
| 40-44        |                  |          | 10        | 45         | 6         |           |           |          |          | 61         |
| 45-49        |                  | 2        | 11        | 56         | 14        | 4         |           |          |          | 87         |
| 50-54        |                  |          | 7         | 43         | 26        | 21        | 2         |          |          | 99         |
| 55-59        |                  |          | 7         | 49         | 21        | 20        | 9         |          |          | 106        |
| 60-64        |                  | 2        | 7         | 36         | 13        | 11        | 5         | 1        |          | 75         |
| 65-69        |                  | 2        | 1         | 5          | 4         | 3         | 2         |          |          | 17         |
| 70-74        |                  |          | 1         | 2          | 1         |           |           |          |          | 4          |
| 75+          |                  |          | 1         |            |           |           |           |          |          | 1          |
| <b>Total</b> | <b>0</b>         | <b>6</b> | <b>51</b> | <b>240</b> | <b>85</b> | <b>59</b> | <b>18</b> | <b>1</b> | <b>0</b> | <b>460</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |            |                                  | Retired Members and Beneficiaries |              |                         |
|-----------------|------------|----------------------------------|-----------------------------------|--------------|-------------------------|
| Age             | Count      | Average Deferred Monthly Benefit | Age                               | Count        | Average Monthly Benefit |
| <20             |            |                                  | <45                               | 17           | 621                     |
| 20-24           |            |                                  | 45-49                             | 10           | 2,284                   |
| 25-29           |            |                                  | 50-54                             | 37           | 2,816                   |
| 30-34           |            |                                  | 55-59                             | 109          | 2,215                   |
| 35-39           | 6          | 525                              | 60-64                             | 335          | 2,007                   |
| 40-44           | 20         | 815                              | 65-69                             | 610          | 1,859                   |
| 45-49           | 48         | 878                              | 70-74                             | 484          | 1,994                   |
| 50-54           | 55         | 1,119                            | 75-79                             | 294          | 1,802                   |
| 55-59           | 58         | 984                              | 80-84                             | 158          | 1,491                   |
| 60-64           | 42         | 752                              | 85-89                             | 84           | 1,176                   |
| 65-69           | 44         | 1,616                            | 90-94                             | 36           | 1,042                   |
| 70-74           | 15         | 426                              | 95-99                             | 9            | 880                     |
| 75+             | 9          | 1,144                            | 100+                              | 4            | 468                     |
| <b>Total</b>    | <b>297</b> | <b>1,009</b>                     | <b>Total</b>                      | <b>2,187</b> | <b>1,857</b>            |

# 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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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.



October 2018

League of Oregon Cities/2521  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
League of Oregon Cities/2521

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.



October 2018  
League of Oregon Cities/2521

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**

**INDEPENDENT EMPLOYERS**

League of Oregon Cities -- #2521

October 2018

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# Executive Summary

Milliman has prepared this report for League of Oregon Cities to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to League of Oregon Cities.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### *Employer Rates Effective July 1, 2019 for League of Oregon Cities*

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 11.31%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 12.34%        | 12.34%          | 12.34%        |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>25.10%</b> | <b>22.19%</b>   | <b>26.82%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>25.16%</b> | <b>22.19%</b>   | <b>26.82%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 58%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 23.65%             | 23.65%                        |
| Minimum 2021-2023 Rate                                       | 18.92%             | 14.19%                        |
| Maximum 2021-2023 Rate                                       | 28.38%             | 33.11%                        |

# 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               | \$12,998,627                  | \$16,022,753                          | \$3,024,126          | 81%                  | \$6,322,166         | 48%   |
| 12/31/2013               | 14,118,834                    | 16,767,448                            | 2,648,614            | 84%                  | 6,364,078           | 42%   |
| 12/31/2014               | 14,507,273                    | 19,985,347                            | 5,478,074            | 73%                  | 6,677,111           | 82%   |
| 12/31/2015               | 14,158,626                    | 20,654,485                            | 6,495,859            | 69%                  | 7,228,275           | 90%   |
| 12/31/2016               | 14,361,068                    | 21,690,717                            | 7,329,649            | 66%                  | 7,830,119           | 94%   |
| 12/31/2017               | 6,771,920                     | 11,643,476                            | 4,871,556            | 58%                  | 1,474,373           | 330%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### *League of Oregon Cities*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$4,871,556               | \$7,329,649       |
| Allocated pooled OPSRP UAL                       | 222,175                   | 1,348,050         |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 5,093,731                 | 8,677,699         |
| Combined valuation payroll                       | 1,474,373                 | 7,830,119         |
| Net pension UAL as a percentage of payroll       | 345%                      | 111%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$16,894)                | (\$1,066)         |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$12,938                  | \$348,299         |
| Tier 1/Tier 2 valuation payroll                                  | 114,428                   | 2,813,732         |
| Tier 1/Tier 2 pension normal cost rate                           | 11.31%                    | 12.38%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$11,643,476              | \$21,690,717      |
| Actuarial asset value  | 6,771,920                 | 14,361,068        |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 4,871,556                 | 7,329,649         |
| Tier 1/ Tier 2 Funded status                                     | 58%                       | 66%               |
| Combined valuation payroll                                       | \$1,474,373               | \$7,830,119       |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 330%                      | 94%               |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 12.34%                    | 7.17%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 1                         | 23                |
| Tier 1/Tier 2 dormant members                                    | 6                         | 13                |
| Tier 1/Tier 2 retirees and beneficiaries                         | 29                        | 41                |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

## Side Account Information

### Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

### 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 1,474,373         | 7,830,119         |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | 0.00%             | 0.00%             |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016   |
|---|--------------------|---------------------|
| 1. Member reserves                                    | \$515,560          | \$1,495,689         |
| 2. Employer reserves                                  | 2,006,404          | 7,106,474           |
| 3. Benefits in force reserve                          | 4,249,956          | 5,758,905           |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$6,771,920</b> | <b>\$14,361,068</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$14,361,068                              |
| 2. Regular employer contributions   | 81,941                                    |
| 3. Benefit payments and expenses  | (791,663)                                 |
| 4. Adjustments <sup>1</sup>   | (7,757,753)                               |
| 5. Interest credited  | 878,327                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$6,771,920</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 136,377           |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 12,938            | 211,922           |
| <b>Total</b>           | <b>\$12,938</b>   | <b>\$348,299</b>  |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$12,938       | \$12,938      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017   | December 31, 2016   |
|--|---------------------|---------------------|
| Active Members                           |                     |                     |
| ▪ Tier 1 Police & Fire                   | \$0                 | \$0                 |
| ▪ Tier 1 General Service                 | 630,539             | 3,344,968           |
| ▪ Tier 2 Police & Fire                   | 0                   | 0                   |
| ▪ Tier 2 General Service                 | 984,101             | 3,578,931           |
| ▪ <b>Total Active Members</b>            | <b>\$1,614,640</b>  | <b>\$6,923,899</b>  |
| Dormant Members                          | 402,288             | 1,166,302           |
| Retired Members and Beneficiaries        | 9,626,548           | 13,600,516          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$11,643,476</b> | <b>\$21,690,717</b> |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$11,643,476   | \$11,643,476  | \$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  | \$11,643,476      | \$21,690,717      |
| 2. Actuarial value of assets  | 6,771,920         | 14,361,068        |
| 3. Unfunded accrued liability (1. – 2.)                                       | 4,871,556         | 7,329,649         |
| 4. Funded percentage (2. ÷ 1.)  | 58%               | 66%               |
| 5. Combined valuation payroll   | \$1,474,373       | \$7,830,119       |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 330%              | 94%               |

### 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<br>December 31, 2016 | Payment   | Interest  | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|-----------|-----------|--------------------------|------------------------|
| December 31, 2013 | \$2,631,061              | \$208,516 | \$181,434 | \$2,603,979              | \$215,811              |
| December 31, 2015 | \$3,848,326              | \$281,599 | \$266,272 | \$3,832,999              | \$291,461              |
| December 31, 2017 | N/A                      | N/A       | N/A       | (\$1,565,422)            | (\$110,529)            |
| <b>Total</b>      |                          |           |           | <b>\$4,871,556</b>       | <b>\$396,743</b>       |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$21,690,717       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 329,571            |
| c. Benefit payments during 2017  | (785,556)          |
| d. Interest at 7.20% to December 31, 2017  | 1,545,316          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 22,780,048         |
| 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.)               | 22,780,048         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 11,643,476         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 11,136,572         |
| 4. Expected actuarial value of assets  |                    |
| a. Actuarial value of assets at December 31, 2016                                    | 14,361,068         |
| b. Contributions for 2017 <sup>1</sup>   | 81,941             |
| c. Benefit payments and expenses during 2017   | (791,663)          |
| d. Interest at 7.20% to December 31, 2017  | 1,008,447          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 14,659,793         |
| 5. Actuarial value of assets at December 31, 2017                                    | 6,771,920          |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | (7,887,873)        |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$3,248,699</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                    |
|---|--------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$7,329,649</b> |
| 2. Expected increase  | 790,606            |
| 3. Liability (gain)/loss  | (11,136,572)       |
| 4. Asset (gain)/loss  | 7,887,873          |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                  |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$4,871,556</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017 |   |                        | December 31, 2016 |   |                        |
|------------------------|-------------------|---|------------------------|-------------------|---|------------------------|
|                        | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$0               | \$0   | 0.00%                  | \$0               | \$0   | 0.00%                  |
| Tier 1 General Service | 0                 | 0   | 0.00%                  | 136,377           | 1,045,418   | 13.05%                 |
| Tier 2 Police & Fire   | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 General Service | 12,938            | 114,428   | 11.31%                 | 211,922           | 1,768,314   | 11.98%                 |
| <b>Total</b>           | <b>\$12,938</b>   | <b>\$114,428</b>                                  | <b>11.31%</b>          | <b>\$348,299</b>  | <b>\$2,813,732</b>                                | <b>12.38%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$4,871,556       | \$7,329,649       |
| 2. Next year's Tier 1/Tier 2 UAL payment | 396,743           | 550,149           |
| 3. Combined valuation payroll            | 1,474,373         | 7,830,119         |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 26.91%            | 7.03%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 11.31%   | 12.38%  |
| b. Tier 1/Tier 2 UAL rate                             | 26.91%   | 7.03%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 38.37%   | 19.55%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |          |
|--|--------------------------|----------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 16.89%   |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%    |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 16.89%   |
| 4. Size of rate collar   |                          |          |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.38%    |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.38%    |
| c. Funded percentage   |                          | 58%      |
| 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.) |                          | 6.76%    |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 10.13%   |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 23.65%   |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 38.37%   |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (14.72%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 26.91%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 12.19%   |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 23.65%   |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%    |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%    |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 11.31%   |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 11.31%   |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 23.65%   |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 11.31%   | 12.38%  |
| b. Tier 1/Tier 2 UAL rate  | 12.19%   | 7.03%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 23.65%   | 19.55%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service    | Police & Fire | Total              |
|-----------------------------------|--------------------|---------------|--------------------|
| Tier 1                            | \$0                | \$0           | \$0                |
| Tier 2                            | 114,428            | 0             | 114,428            |
| Tier 1/Tier 2 valuation payroll   | 114,428            | 0             | 114,428            |
| OPSRP valuation payroll           | 1,359,945          | 0             | 1,359,945          |
| <b>Combined valuation payroll</b> | <b>\$1,474,373</b> | <b>\$0</b>    | <b>\$1,474,373</b> |

### *Employer Member Census*

|  | December 31 |           |           |           |           |           |           |            |
|--|-------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
|  | 2017        |           |           |           | 2016      |           |           |            |
|  | Tier 1      | Tier 2    | OPSRP     | Total     | Tier 1    | Tier 2    | OPSRP     | Total      |
| <b>Active Members <sup>1</sup></b>                                     |             |           |           |           |           |           |           |            |
| General Service  | 0           | 1         | 17        | 18        | 8         | 15        | 57        | 80         |
| Police & Fire  | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0          |
| Total  | 0           | 1         | 17        | 18        | 8         | 15        | 57        | 80         |
| <b>Active Members with previous service segments with the employer</b> |             |           |           |           |           |           |           |            |
| General Service  | 4           | 7         | N/A       | 11        | 6         | 8         | N/A       | 14         |
| Police & Fire  | 0           | 0         | N/A       | 0         | 0         | 0         | N/A       | 0          |
| Total  | 4           | 7         | N/A       | 11        | 6         | 8         | N/A       | 14         |
| <b>Dormant Members</b>   |             |           |           |           |           |           |           |            |
| General Service  | 2           | 4         | 1         | 7         | 6         | 7         | 6         | 19         |
| Police & Fire  | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0          |
| Total  | 2           | 4         | 1         | 7         | 6         | 7         | 6         | 19         |
| <b>Retired Members and Beneficiaries</b>                               |             |           |           |           |           |           |           |            |
| General Service  | 28          | 1         | 1         | 30        | 37        | 4         | 5         | 46         |
| Police & Fire  | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0          |
| Total  | 28          | 1         | 1         | 30        | 37        | 4         | 5         | 46         |
| <b>Grand Total Number of Members</b>                                   | <b>34</b>   | <b>13</b> | <b>19</b> | <b>66</b> | <b>57</b> | <b>34</b> | <b>68</b> | <b>159</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          | 1        |          |          |          |          |          |          | 1        |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             | 1         | 742                     |
| 30-34           |          |                                  | 55-59                             | 2         | 2,940                   |
| 35-39           | 2        | 667                              | 60-64                             | 2         | 1,903                   |
| 40-44           |          |                                  | 65-69                             | 6         | 1,719                   |
| 45-49           | 3        | 1,412                            | 70-74                             | 11        | 2,748                   |
| 50-54           | 1        | 157                              | 75-79                             | 5         | 1,707                   |
| 55-59           |          |                                  | 80-84                             | 1         | 35                      |
| 60-64           |          |                                  | 85-89                             | 1         | 7,958                   |
| 65-69           |          |                                  | 90-94                             |           |                         |
| 70-74           |          |                                  | 95-99                             |           |                         |
| 75+             |          |                                  | 100+                              |           |                         |
| <b>Total</b>    | <b>6</b> | <b>955</b>                       | <b>Total</b>                      | <b>29</b> | <b>2,327</b>            |

## 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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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.



October 2018

Linn County/2014  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Linn County/2014

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.



October 2018  
Linn County/2014

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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**

**INDEPENDENT EMPLOYERS**

**Linn County -- #2014**

**October 2018**

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## Executive Summary

Milliman has prepared this report for Linn County to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Linn County.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### *Employer Rates Effective July 1, 2019 for Linn County*

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 16.96%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 8.70%         | 8.70%           | 8.70%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>27.11%</b> | <b>18.55%</b>   | <b>23.18%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>27.17%</b> | <b>18.55%</b>   | <b>23.18%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 74%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 25.66%             | 25.66%                        |
| Minimum 2021-2023 Rate                                       | 20.53%             | 15.40%                        |
| Maximum 2021-2023 Rate                                       | 30.79%             | 35.92%                        |

# 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               | \$159,362,121                 | \$189,449,664                         | \$30,087,543         | 84%                  | \$34,115,995        | 88%   |
| 12/31/2013               | 175,224,089                   | 199,169,091                           | 23,945,002           | 88%                  | 32,600,717          | 73%   |
| 12/31/2014               | 180,267,989                   | 234,410,147                           | 54,142,158           | 77%                  | 33,973,436          | 159%  |
| 12/31/2015               | 176,031,314                   | 242,098,001                           | 66,066,687           | 73%                  | 36,141,418          | 183%  |
| 12/31/2016               | 179,974,236                   | 256,803,201                           | 76,828,965           | 70%                  | 37,468,112          | 205%  |
| 12/31/2017               | 197,222,150                   | 267,982,913                           | 70,760,763           | 74%                  | 38,452,587          | 184%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### ***Linn County***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$70,760,763              | \$76,828,965      |
| Allocated pooled OPSRP UAL                       | 5,794,463                 | 6,450,592         |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 76,555,226                | 83,279,557        |
| Combined valuation payroll                       | 38,452,587                | 37,468,112        |
| Net pension UAL as a percentage of payroll       | 199%                      | 222%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$440,597)               | (\$5,102)         |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$3,060,153               | \$3,305,819       |
| Tier 1/Tier 2 valuation payroll                                  | 18,044,857                | 19,248,818        |
| Tier 1/Tier 2 pension normal cost rate                           | 16.96%                    | 17.17%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$267,982,913             | \$256,803,201     |
| Actuarial asset value  | 197,222,150               | 179,974,236       |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 70,760,763                | 76,828,965        |
| Tier 1/ Tier 2 Funded status                                     | 74%                       | 70%               |
| Combined valuation payroll                                       | \$38,452,587              | \$37,468,112      |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 184%                      | 205%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 8.70%                     | 8.49%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 246                       | 275               |
| Tier 1/Tier 2 dormant members                                    | 142                       | 160               |
| Tier 1/Tier 2 retirees and beneficiaries                         | 743                       | 697               |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 38,452,587        | 37,468,112        |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017    | December 31, 2016    |
|---|----------------------|----------------------|
| 1. Member reserves                                    | \$23,450,418         | \$25,568,114         |
| 2. Employer reserves                                  | 101,453,994          | 91,627,482           |
| 3. Benefits in force reserve                          | 72,317,738           | 62,778,640           |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$197,222,150</b> | <b>\$179,974,236</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$179,974,236                             |
| 2. Regular employer contributions   | 4,515,403                                 |
| 3. Benefit payments and expenses  | (13,471,022)                              |
| 4. Adjustments <sup>1</sup>   | 423,047                                   |
| 5. Interest credited  | 25,780,486                                |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$197,222,150</b>                      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017  | December 31, 2016  |
|------------------------|--------------------|--------------------|
| Tier 1 Police & Fire   | \$516,257          | \$625,471          |
| Tier 1 General Service | 988,222            | 1,144,961          |
| Tier 2 Police & Fire   | 681,416            | 662,893            |
| Tier 2 General Service | 874,258            | 872,494            |
| <b>Total</b>           | <b>\$3,060,153</b> | <b>\$3,305,819</b> |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$3,060,153    | \$3,060,153   | \$0        |



## Tier 1/Tier 2 Valuation Results

### Liabilities

#### ***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.

#### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017    | December 31, 2016    |
|--|----------------------|----------------------|
| Active Members                           |                      |                      |
| ▪ Tier 1 Police & Fire                   | \$19,025,988         | \$21,198,488         |
| ▪ Tier 1 General Service                 | 34,707,235           | 38,394,579           |
| ▪ Tier 2 Police & Fire                   | 15,538,859           | 13,871,437           |
| ▪ Tier 2 General Service                 | 23,216,583           | 21,437,611           |
| ▪ <b>Total Active Members</b>            | <b>\$92,488,665</b>  | <b>\$94,902,115</b>  |
| Dormant Members                          | 11,687,792           | 13,639,934           |
| Retired Members and Beneficiaries        | 163,806,456          | 148,261,152          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$267,982,913</b> | <b>\$256,803,201</b> |

#### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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

|                             | Before<br>Changes | After<br>Changes | Net<br>Change |
|-----------------------------|-------------------|------------------|---------------|
| Actuarial Accrued Liability | \$267,982,913     | \$267,982,913    | \$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  | \$267,982,913     | \$256,803,201     |
| 2. Actuarial value of assets  | 197,222,150       | 179,974,236       |
| 3. Unfunded accrued liability (1. – 2.)                                       | 70,760,763        | 76,828,965        |
| 4. Funded percentage (2. ÷ 1.)  | 74%               | 70%               |
| 5. Combined valuation payroll   | \$38,452,587      | \$37,468,112      |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 184%              | 205%              |

#### 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<br>December 31, 2016 | Payment     | Interest    | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|-------------|-------------|--------------------------|------------------------|
| December 31, 2013 | \$23,786,302             | \$1,885,109 | \$1,640,267 | \$23,541,460             | \$1,951,058            |
| December 31, 2015 | \$42,129,633             | \$3,082,806 | \$2,915,021 | \$41,961,848             | \$3,190,772            |
| December 31, 2017 | N/A                      | N/A         | N/A         | \$5,257,455              | \$371,211              |
| <b>Total</b>      |                          |             |             | <b>\$70,760,763</b>      | <b>\$5,513,041</b>     |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$256,803,201       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 3,127,836           |
| c. Benefit payments during 2017  | (13,367,114)        |
| d. Interest at 7.20% to December 31, 2017  | 18,121,216          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 264,685,139         |
| 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.)               | 264,685,139         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 267,982,913         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (3,297,774)         |
| 4. Expected actuarial value of assets  |                     |
| a. Actuarial value of assets at December 31, 2016                                    | 179,974,236         |
| b. Contributions for 2017 <sup>1</sup>   | 4,515,403           |
| c. Benefit payments and expenses during 2017   | (13,471,022)        |
| d. Interest at 7.20% to December 31, 2017  | 12,635,743          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 183,654,360         |
| 5. Actuarial value of assets at December 31, 2017                                    | 197,222,150         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 13,567,790          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$10,270,016</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                     |
|---|---------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$76,828,965</b> |
| 2. Expected increase  | 4,201,814           |
| 3. Liability (gain)/loss  | 3,297,774           |
| 4. Asset (gain)/loss  | (13,567,790)        |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                   |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$70,760,763</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017  |   |                        | December 31, 2016  |   |                        |
|------------------------|--------------------|---|------------------------|--------------------|---|------------------------|
|                        | Normal Cost        | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost        | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$516,257          | \$2,264,629                                       | 22.80%                 | \$625,471          | \$2,675,967                                       | 23.37%                 |
| Tier 1 General Service | 988,222            | 5,651,290   | 17.49%                 | 1,144,961          | 6,488,540   | 17.65%                 |
| Tier 2 Police & Fire   | 681,416            | 3,393,753   | 20.08%                 | 662,893            | 3,251,761   | 20.39%                 |
| Tier 2 General Service | 874,258            | 6,735,185   | 12.98%                 | 872,494            | 6,832,550   | 12.77%                 |
| <b>Total</b>           | <b>\$3,060,153</b> | <b>\$18,044,857</b>                               | <b>16.96%</b>          | <b>\$3,305,819</b> | <b>\$19,248,818</b>                               | <b>17.17%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$70,760,763      | \$76,828,965      |
| 2. Next year's Tier 1/Tier 2 UAL payment | 5,513,041         | 5,738,446         |
| 3. Combined valuation payroll            | 38,452,587        | 37,468,112        |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 14.34%            | 15.32%            |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 16.96%   | 17.17%  |
| b. Tier 1/Tier 2 UAL rate                             | 14.34%   | 15.32%  |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 31.45%   | 32.63%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 21.38%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 21.38%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 4.28%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 4.28%   |
| c. Funded percentage   |                          | 74%     |
| 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.) |                          | 4.28%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 17.10%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 25.66%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 31.45%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (5.79%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 14.34%  |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 8.55%   |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 25.66%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 16.96%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 16.96%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 25.66%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates        |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate | 16.96%   | 17.17%  |
| b. Tier 1/Tier 2 UAL rate                          | 8.55%  | 8.35%   |
| c. Multnomah Fire District #10 rate                | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate                | 25.66%   | 25.66%  |
| <i>(a. + b. + c., minimum of 5.94%)</i>            |  |   |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service     | Police & Fire       | Total               |
|-----------------------------------|---------------------|---------------------|---------------------|
| Tier 1                            | \$5,651,290         | \$2,264,629         | \$7,915,919         |
| Tier 2                            | 6,735,185           | 3,393,753           | 10,128,938          |
| Tier 1/Tier 2 valuation payroll   | 12,386,475          | 5,658,382           | 18,044,857          |
| OPSRP valuation payroll           | 15,767,689          | 4,640,041           | 20,407,730          |
| <b>Combined valuation payroll</b> | <b>\$28,154,164</b> | <b>\$10,298,423</b> | <b>\$38,452,587</b> |

### *Employer Member Census*

|  | December 31 |            |            |              |            |            |            |              |
|--|-------------|------------|------------|--------------|------------|------------|------------|--------------|
|  | 2017        |            |            |              | 2016       |            |            |              |
|  | Tier 1      | Tier 2     | OPSRP      | Total        | Tier 1     | Tier 2     | OPSRP      | Total        |
| <b>Active Members <sup>1</sup></b>                                     |             |            |            |              |            |            |            |              |
| General Service  | 77          | 106        | 318        | 501          | 92         | 112        | 294        | 498          |
| Police & Fire  | 23          | 40         | 61         | 124          | 30         | 41         | 54         | 125          |
| Total  | 100         | 146        | 379        | 625          | 122        | 153        | 348        | 623          |
| <b>Active Members with previous service segments with the employer</b> |             |            |            |              |            |            |            |              |
| General Service  | 58          | 87         | N/A        | 145          | 68         | 96         | N/A        | 164          |
| Police & Fire  | 15          | 11         | N/A        | 26           | 17         | 11         | N/A        | 28           |
| Total  | 73          | 98         | N/A        | 171          | 85         | 107        | N/A        | 192          |
| <b>Dormant Members</b>   |             |            |            |              |            |            |            |              |
| General Service  | 52          | 75         | 53         | 180          | 56         | 84         | 48         | 188          |
| Police & Fire  | 8           | 7          | 2          | 17           | 12         | 8          | 2          | 22           |
| Total  | 60          | 82         | 55         | 197          | 68         | 92         | 50         | 210          |
| <b>Retired Members and Beneficiaries</b>                               |             |            |            |              |            |            |            |              |
| General Service  | 521         | 78         | 17         | 616          | 493        | 73         | 13         | 579          |
| Police & Fire  | 134         | 10         | 1          | 145          | 123        | 8          | 1          | 132          |
| Total  | 655         | 88         | 18         | 761          | 616        | 81         | 14         | 711          |
| <b>Grand Total Number of Members</b>                                   | <b>888</b>  | <b>414</b> | <b>452</b> | <b>1,754</b> | <b>891</b> | <b>433</b> | <b>412</b> | <b>1,736</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          | 1         |           |           |           |          |          |          | 1          |
| 35-39        |                  | 1        | 3         | 5         |           |           |          |          |          | 9          |
| 40-44        |                  |          | 7         | 19        | 5         |           |          |          |          | 31         |
| 45-49        |                  | 1        | 7         | 25        | 23        | 1         |          |          |          | 57         |
| 50-54        |                  |          | 3         | 19        | 19        | 11        |          |          |          | 52         |
| 55-59        |                  | 1        | 5         | 9         | 11        | 10        | 4        | 1        |          | 41         |
| 60-64        |                  | 1        | 3         | 12        | 8         | 7         | 1        | 1        |          | 33         |
| 65-69        |                  |          | 1         | 5         | 7         | 3         | 1        | 1        | 1        | 19         |
| 70-74        |                  |          |           | 1         | 1         |           |          | 1        |          | 3          |
| 75+          |                  |          |           |           |           |           |          |          |          |            |
| <b>Total</b> | <b>0</b>         | <b>4</b> | <b>30</b> | <b>95</b> | <b>74</b> | <b>32</b> | <b>6</b> | <b>4</b> | <b>1</b> | <b>246</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |            |                                  | Retired Members and Beneficiaries |            |                         |
|-----------------|------------|----------------------------------|-----------------------------------|------------|-------------------------|
| Age             | Count      | Average Deferred Monthly Benefit | Age                               | Count      | Average Monthly Benefit |
| <20             |            |                                  | <45                               | 3          | 1,817                   |
| 20-24           |            |                                  | 45-49                             |            |                         |
| 25-29           |            |                                  | 50-54                             | 12         | 2,183                   |
| 30-34           | 2          | 681                              | 55-59                             | 41         | 1,924                   |
| 35-39           | 2          | 668                              | 60-64                             | 127        | 1,758                   |
| 40-44           | 16         | 618                              | 65-69                             | 178        | 1,434                   |
| 45-49           | 18         | 665                              | 70-74                             | 162        | 1,396                   |
| 50-54           | 24         | 710                              | 75-79                             | 95         | 1,375                   |
| 55-59           | 36         | 692                              | 80-84                             | 69         | 1,054                   |
| 60-64           | 20         | 1,031                            | 85-89                             | 32         | 1,349                   |
| 65-69           | 15         | 1,369                            | 90-94                             | 15         | 1,093                   |
| 70-74           | 6          | 565                              | 95-99                             | 7          | 1,155                   |
| 75+             | 3          | 1,296                            | 100+                              | 2          | 1,290                   |
| <b>Total</b>    | <b>142</b> | <b>809</b>                       | <b>Total</b>                      | <b>743</b> | <b>1,465</b>            |

## 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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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.



October 2018

Malheur County/2039  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
Malheur County/2039

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.



October 2018  
Malheur County/2039

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**

**INDEPENDENT EMPLOYERS**

**Malheur County -- #2039**

**October 2018**

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## Executive Summary

Milliman has prepared this report for Malheur County to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Malheur County.

### Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

#### *Employer Rates Effective July 1, 2019 for Malheur County*

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 16.34%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 3.05%         | 3.05%           | 3.05%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>20.84%</b> | <b>12.90%</b>   | <b>17.53%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>20.90%</b> | <b>12.90%</b>   | <b>17.53%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

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

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 19.39%             | 19.39%                        |
| Minimum 2021-2023 Rate                                       | 15.51%             | 11.63%                        |
| Maximum 2021-2023 Rate                                       | 23.27%             | 27.15%                        |

# 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               | \$36,288,108                  | \$37,610,222                          | \$1,322,114          | 96%                  | \$7,739,628         | 17%   |
| 12/31/2013               | 40,424,622                    | 38,745,745                            | (1,678,877)          | 104%                 | 7,615,815           | (22%)   |
| 12/31/2014               | 41,395,207                    | 45,550,816                            | 4,155,609            | 91%                  | 7,701,161           | 54%   |
| 12/31/2015               | 39,964,309                    | 46,633,086                            | 6,668,777            | 86%                  | 7,543,812           | 88%   |
| 12/31/2016               | 40,712,398                    | 49,167,276                            | 8,454,878            | 83%                  | 7,748,213           | 109%  |
| 12/31/2017               | 41,869,323                    | 48,615,562                            | 6,746,240            | 86%                  | 7,363,789           | 92%   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### **Malheur County**

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$6,746,239               | \$8,454,878       |
| Allocated pooled OPSRP UAL                       | 1,109,658                 | 1,333,949         |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 7,855,897                 | 9,788,827         |
| Combined valuation payroll                       | 7,363,789                 | 7,748,213         |
| Net pension UAL as a percentage of payroll       | 107%                      | 126%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$84,376)                | (\$1,055)         |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$549,434                 | \$676,252         |
| Tier 1/Tier 2 valuation payroll                                  | 3,362,838                 | 3,781,903         |
| Tier 1/Tier 2 pension normal cost rate                           | 16.34%                    | 17.88%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$48,615,562              | \$49,167,276      |
| Actuarial asset value  | 41,869,323                | 40,712,398        |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 6,746,239                 | 8,454,878         |
| Tier 1/ Tier 2 Funded status                                     | 86%                       | 83%               |
| Combined valuation payroll                                       | \$7,363,789               | \$7,748,213       |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 92%                       | 109%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 3.05%                     | 1.51%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 61                        | 69                |
| Tier 1/Tier 2 dormant members                                    | 57                        | 61                |
| Tier 1/Tier 2 retirees and beneficiaries                         | 198                       | 184               |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 7,363,789         | 7,748,213         |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | 0.00%             | 0.00%             |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017   | December 31, 2016   |
|---|---------------------|---------------------|
| 1. Member reserves                                    | \$4,537,620         | \$6,413,467         |
| 2. Employer reserves                                  | 24,714,822          | 23,766,672          |
| 3. Benefits in force reserve                          | 12,616,880          | 10,532,259          |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$41,869,323</b> | <b>\$40,712,398</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$40,712,398                              |
| 2. Regular employer contributions   | 478,705                                   |
| 3. Benefit payments and expenses  | (2,350,215)                               |
| 4. Adjustments <sup>1</sup>   | (2,488,178)                               |
| 5. Interest credited  | 5,516,613                                 |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$41,869,323</b>                       |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$65,266          | \$94,004          |
| Tier 1 General Service | 107,251           | 205,726           |
| Tier 2 Police & Fire   | 168,084           | 165,729           |
| Tier 2 General Service | 208,833           | 210,793           |
| <b>Total</b>           | <b>\$549,434</b>  | <b>\$676,252</b>  |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$549,434      | \$549,434     | \$0        |



## Tier 1/Tier 2 Valuation Results

### Liabilities

#### ***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.

#### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017   | December 31, 2016   |
|--|---------------------|---------------------|
| Active Members                           |                     |                     |
| ▪ Tier 1 Police & Fire                   | \$2,125,299         | \$3,011,902         |
| ▪ Tier 1 General Service                 | 5,150,251           | 8,620,817           |
| ▪ Tier 2 Police & Fire                   | 3,898,620           | 3,578,614           |
| ▪ Tier 2 General Service                 | 4,798,688           | 4,544,249           |
| ▪ <b>Total Active Members</b>            | <b>\$15,972,858</b> | <b>\$19,755,582</b> |
| Dormant Members                          | 4,064,288           | 4,538,187           |
| Retired Members and Beneficiaries        | 28,578,416          | 24,873,507          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$48,615,562</b> | <b>\$49,167,276</b> |

#### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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

|                             | Before<br>Changes | After<br>Changes | Net<br>Change |
|-----------------------------|-------------------|------------------|---------------|
| Actuarial Accrued Liability | \$48,615,562      | \$48,615,562     | \$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  | \$48,615,562      | \$49,167,276      |
| 2. Actuarial value of assets  | 41,869,323        | 40,712,398        |
| 3. Unfunded accrued liability (1. – 2.)                                       | 6,746,239         | 8,454,878         |
| 4. Funded percentage (2. ÷ 1.)  | 86%               | 83%               |
| 5. Combined valuation payroll   | \$7,363,789       | \$7,748,213       |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 92%               | 109%              |

#### 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<br>December 31, 2016 | Payment     | Interest    | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|-------------|-------------|--------------------------|------------------------|
| December 31, 2013 | (\$1,667,750)            | (\$132,172) | (\$115,005) | (\$1,650,583)            | (\$136,796)            |
| December 31, 2015 | \$8,344,275              | \$610,586   | \$577,355   | \$8,311,044              | \$631,970              |
| December 31, 2017 | N/A                      | N/A         | N/A         | \$85,778                 | \$6,056                |
| <b>Total</b>      |                          |             |             | <b>\$6,746,239</b>       | <b>\$501,230</b>       |

## Tier 1/Tier 2 Valuation Results

### Unfunded Accrued Liability (UAL)

#### ***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                                  | \$49,167,276       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 639,803            |
| c. Benefit payments during 2017  | (2,332,087)        |
| d. Interest at 7.20% to December 31, 2017  | 3,479,122          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 50,954,114         |
| 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.)               | 50,954,114         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 48,615,562         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 2,338,552          |
| 4. Expected actuarial value of assets  |                    |
| a. Actuarial value of assets at December 31, 2016                                    | 40,712,398         |
| b. Contributions for 2017 <sup>1</sup>   | 478,705            |
| c. Benefit payments and expenses during 2017   | (2,350,215)        |
| d. Interest at 7.20% to December 31, 2017  | 2,863,918          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 41,704,806         |
| 5. Actuarial value of assets at December 31, 2017                                    | 41,869,323         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 164,517            |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$2,503,069</b> |

#### ***Unfunded Accrued Liability Reconciliation***

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

|   |                    |
|---|--------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$8,454,878</b> |
| 2. Expected increase  | 794,430            |
| 3. Liability (gain)/loss  | (2,338,552)        |
| 4. Asset (gain)/loss  | (164,517)          |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                  |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$6,746,239</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$65,266          | \$298,475                                | 21.87%           | \$94,004          | \$423,019                                | 22.22%           |
| Tier 1 General Service | 107,251           | 630,588                                  | 17.01%           | 205,726           | 894,839                                  | 22.99%           |
| Tier 2 Police & Fire   | 168,084           | 783,429                                  | 21.45%           | 165,729           | 779,344                                  | 21.27%           |
| Tier 2 General Service | 208,833           | 1,650,346                                | 12.65%           | 210,793           | 1,684,701                                | 12.51%           |
| <b>Total</b>           | <b>\$549,434</b>  | <b>\$3,362,838</b>                       | <b>16.34%</b>    | <b>\$676,252</b>  | <b>\$3,781,903</b>                       | <b>17.88%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$6,746,239       | \$8,454,878       |
| 2. Next year's Tier 1/Tier 2 UAL payment | 501,230           | 603,977           |
| 3. Combined valuation payroll            | 7,363,789         | 7,748,213         |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 6.81%             | 7.80%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 16.34%   | 17.88%  |
| b. Tier 1/Tier 2 UAL rate                             | 6.81%  | 7.80%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 23.30%   | 25.82%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 16.16%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 16.16%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.23%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.23%   |
| 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.) |                          | 3.23%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 12.93%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 19.39%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 23.30%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (3.91%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 6.81%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 2.90%   |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 19.39%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 16.34%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 16.34%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 19.39%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 16.34%   | 17.88%  |
| b. Tier 1/Tier 2 UAL rate  | 2.90%  | 1.37%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 19.39%   | 19.39%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service    | Police & Fire      | Total              |
|-----------------------------------|--------------------|--------------------|--------------------|
| Tier 1                            | \$630,588          | \$298,475          | \$929,063          |
| Tier 2                            | 1,650,346          | 783,429            | 2,433,775          |
| Tier 1/Tier 2 valuation payroll   | 2,280,934          | 1,081,904          | 3,362,838          |
| OPSRP valuation payroll           | 2,635,744          | 1,365,207          | 4,000,951          |
| <b>Combined valuation payroll</b> | <b>\$4,916,678</b> | <b>\$2,447,111</b> | <b>\$7,363,789</b> |

### *Employer Member Census*

|  | December 31 |            |            |            |            |            |            |            |
|--|-------------|------------|------------|------------|------------|------------|------------|------------|
|  | 2017        |            |            |            | 2016       |            |            |            |
|  | Tier 1      | Tier 2     | OPSRP      | Total      | Tier 1     | Tier 2     | OPSRP      | Total      |
| <b>Active Members <sup>1</sup></b>                                     |             |            |            |            |            |            |            |            |
| General Service  | 12          | 33         | 59         | 104        | 17         | 34         | 62         | 113        |
| Police & Fire  | 4           | 12         | 25         | 41         | 6          | 12         | 22         | 40         |
| Total  | 16          | 45         | 84         | 145        | 23         | 46         | 84         | 153        |
| <b>Active Members with previous service segments with the employer</b> |             |            |            |            |            |            |            |            |
| General Service  | 16          | 11         | N/A        | 27         | 18         | 13         | N/A        | 31         |
| Police & Fire  | 2           | 7          | N/A        | 9          | 3          | 8          | N/A        | 11         |
| Total  | 18          | 18         | N/A        | 36         | 21         | 21         | N/A        | 42         |
| <b>Dormant Members</b>   |             |            |            |            |            |            |            |            |
| General Service  | 23          | 19         | 14         | 56         | 24         | 21         | 14         | 59         |
| Police & Fire  | 5           | 10         | 1          | 16         | 7          | 9          | 2          | 18         |
| Total  | 28          | 29         | 15         | 72         | 31         | 30         | 16         | 77         |
| <b>Retired Members and Beneficiaries</b>                               |             |            |            |            |            |            |            |            |
| General Service  | 131         | 17         | 3          | 151        | 123        | 17         | 2          | 142        |
| Police & Fire  | 48          | 2          | 0          | 50         | 42         | 2          | 0          | 44         |
| Total  | 179         | 19         | 3          | 201        | 165        | 19         | 2          | 186        |
| <b>Grand Total Number of Members</b>                                   | <b>241</b>  | <b>111</b> | <b>102</b> | <b>454</b> | <b>240</b> | <b>116</b> | <b>102</b> | <b>458</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |           | 1         |           |          |          |          |          | 1         |
| 40-44        |                  |          | 2         | 4         | 1         |          |          |          |          | 7         |
| 45-49        |                  |          | 1         | 9         | 4         | 1        |          |          |          | 15        |
| 50-54        |                  |          | 2         | 2         | 4         |          |          |          |          | 8         |
| 55-59        |                  |          | 4         | 7         | 2         | 1        |          |          |          | 14        |
| 60-64        |                  |          | 1         | 9         | 3         | 1        |          | 1        |          | 15        |
| 65-69        |                  |          |           |           | 1         |          |          |          |          | 1         |
| 70-74        |                  |          |           |           |           |          |          |          |          |           |
| 75+          |                  |          |           |           |           |          |          |          |          |           |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>10</b> | <b>32</b> | <b>15</b> | <b>3</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>61</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |           |                                  | Retired Members and Beneficiaries |            |                         |
|-----------------|-----------|----------------------------------|-----------------------------------|------------|-------------------------|
| Age             | Count     | Average Deferred Monthly Benefit | Age                               | Count      | Average Monthly Benefit |
| <20             |           |                                  | <45                               | 1          | 329                     |
| 20-24           |           |                                  | 45-49                             |            |                         |
| 25-29           |           |                                  | 50-54                             | 5          | 1,405                   |
| 30-34           |           |                                  | 55-59                             | 15         | 999                     |
| 35-39           | 1         | 1,121                            | 60-64                             | 30         | 773                     |
| 40-44           | 9         | 420                              | 65-69                             | 48         | 974                     |
| 45-49           | 11        | 650                              | 70-74                             | 41         | 1,197                   |
| 50-54           | 8         | 729                              | 75-79                             | 22         | 1,041                   |
| 55-59           | 11        | 464                              | 80-84                             | 19         | 1,305                   |
| 60-64           | 6         | 775                              | 85-89                             | 10         | 537                     |
| 65-69           | 7         | 411                              | 90-94                             | 6          | 275                     |
| 70-74           | 2         | 1,729                            | 95-99                             | 1          | 655                     |
| 75+             | 2         | 692                              | 100+                              |            |                         |
| <b>Total</b>    | <b>57</b> | <b>620</b>                       | <b>Total</b>                      | <b>198</b> | <b>994</b>              |

## 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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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.



October 2018

Mapleton Water District/2597  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
Mapleton Water District/2597

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.



October 2018  
Mapleton Water District/2597

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**

**INDEPENDENT EMPLOYERS**

**Mapleton Water District -- #2597**

**October 2018**

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# Executive Summary

Milliman has prepared this report for Mapleton Water District to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Mapleton Water District.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Mapleton Water District***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 17.05%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | (0.44%)       | (0.44%)         | (0.44%)       |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>18.06%</b> | <b>9.41%</b>    | <b>14.04%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>18.12%</b> | <b>9.41%</b>    | <b>14.04%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 102%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 16.61%             | 16.61%                        |
| Minimum 2021-2023 Rate                                       | 13.29%             | 9.97%                         |
| Maximum 2021-2023 Rate                                       | 19.93%             | 23.25%                        |

# 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               | \$172,579                     | \$179,803                             | \$7,224              | 96%                  | \$63,361            | 11%   |
| 12/31/2013               | 200,313                       | 187,040                               | (13,273)             | 107%                 | 62,438              | (21%)   |
| 12/31/2014               | 217,395                       | 221,818                               | 4,423                | 98%                  | 66,719              | 7%  |
| 12/31/2015               | 228,376                       | 235,890                               | 7,514                | 97%                  | 69,025              | 11%   |
| 12/31/2016               | 246,651                       | 264,298                               | 17,647               | 93%                  | 76,138              | 23%   |
| 12/31/2017               | 287,016                       | 281,148                               | (5,868)              | 102%                 | 78,312              | (7%)  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Mapleton Water District***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | (\$5,868)                 | \$17,647          |
| Allocated pooled OPSRP UAL                       | 11,801                    | 13,108            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 5,933                     | 30,755            |
| Combined valuation payroll                       | 78,312                    | 76,138            |
| Net pension UAL as a percentage of payroll       | 8%                        | 40%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$897)                   | (\$10)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$9,970                   | \$9,572           |
| Tier 1/Tier 2 valuation payroll                                  | 58,467                    | 56,860            |
| Tier 1/Tier 2 pension normal cost rate                           | 17.05%                    | 16.83%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$281,148                 | \$264,298         |
| Actuarial asset value  | 287,016                   | 246,651           |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | (5,868)                   | 17,647            |
| Tier 1/ Tier 2 Funded status                                     | 102%                      | 93%               |
| Combined valuation payroll                                       | \$78,312                  | \$76,138          |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | (7%)                      | 23%               |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | (0.44%)                   | 1.19%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 1                         | 1                 |
| Tier 1/Tier 2 dormant members                                    | 0                         | 0                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 1                         | 1                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 78,312            | 76,138            |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | 0.00%             | 0.00%             |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$66,967          | \$62,001          |
| 2. Employer reserves                                  | 200,995           | 166,821           |
| 3. Benefits in force reserve                          | 19,054            | 17,829            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$287,016</b>  | <b>\$246,651</b>  |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$246,651                                 |
| 2. Regular employer contributions   | 7,350                                     |
| 3. Benefit payments and expenses  | (3,549)                                   |
| 4. Adjustments <sup>1</sup>   | 2,494                                     |
| 5. Interest credited  | 34,070                                    |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$287,016</b>                          |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 9,970             | 9,572             |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$9,970</b>    | <b>\$9,572</b>    |

### Change in Tier 1/Tier 2 Normal Cost

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$9,970        | \$9,970       | \$0        |



## Tier 1/Tier 2 Valuation Results

### Liabilities

#### ***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.

#### ***Summary of Actuarial Accrued Liability by Tier/Member Classification***

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$0               | \$0               |
| ▪ Tier 1 General Service                 | 237,989           | 222,193           |
| ▪ Tier 2 Police & Fire                   | 0                 | 0                 |
| ▪ Tier 2 General Service                 | 0                 | 0                 |
| ▪ <b>Total Active Members</b>            | <b>\$237,989</b>  | <b>\$222,193</b>  |
| Dormant Members                          | 0                 | 0                 |
| Retired Members and Beneficiaries        | 43,159            | 42,105            |
| <b>Total Actuarial Accrued Liability</b> | <b>\$281,148</b>  | <b>\$264,298</b>  |

#### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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 | \$281,148      | \$281,148     | \$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   | \$281,148         | \$264,298         |
| 2. Actuarial value of assets   | 287,016           | 246,651           |
| 3. Unfunded accrued liability (1. – 2.)                                    | (5,868)           | 17,647            |
| 4. Funded percentage (2. ÷ 1.)   | 102%              | 93%               |
| 5. Combined valuation payroll  | \$78,312          | \$76,138          |
| 6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.) | (7%)              | 23%               |

### 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<br>December 31, 2016 | Payment   | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|-----------|----------|--------------------------|------------------------|
| December 31, 2013 | (\$13,186)               | (\$1,045) | (\$909)  | (\$13,050)               | (\$1,082)              |
| December 31, 2015 | \$20,772                 | \$1,520   | \$1,437  | \$20,689                 | \$1,573                |
| December 31, 2017 | N/A                      | N/A       | N/A      | (\$13,507)               | (\$954)                |
| <b>Total</b>      |                          |           |          | <b>(\$5,868)</b>         | <b>(\$463)</b>         |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### *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                                  | \$264,298       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 9,057           |
| c. Benefit payments during 2017  | (3,522)         |
| d. Interest at 7.20% to December 31, 2017  | 19,229          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 289,062         |
| 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.)               | 289,062         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 281,148         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 7,914           |
| 4. Expected actuarial value of assets  |                 |
| a. Actuarial value of assets at December 31, 2016                                    | 246,651         |
| b. Contributions for 2017 <sup>1</sup>   | 7,350           |
| c. Benefit payments and expenses during 2017   | (3,549)         |
| d. Interest at 7.20% to December 31, 2017  | 17,896          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 268,347         |
| 5. Actuarial value of assets at December 31, 2017                                    | 287,016         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 18,669          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$26,583</b> |

### *Unfunded Accrued Liability Reconciliation*

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$17,647</b>  |
| 2. Expected increase  | 3,068            |
| 3. Liability (gain)/loss  | (7,914)          |
| 4. Asset (gain)/loss  | (18,669)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>(\$5,868)</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 9,970             | 58,467                                   | 17.05%           | 9,572             | 56,860                                   | 16.83%           |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| <b>Total</b>           | <b>\$9,970</b>    | <b>\$58,467</b>                          | <b>17.05%</b>    | <b>\$9,572</b>    | <b>\$56,860</b>                          | <b>16.83%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | (\$5,868)         | \$17,647          |
| 2. Next year's Tier 1/Tier 2 UAL payment | (463)             | 1,185             |
| 3. Combined valuation payroll            | 78,312            | 76,138            |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | (0.59%)           | 1.56%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 17.05%   | 16.83%  |
| b. Tier 1/Tier 2 UAL rate                             | (0.59%)  | 1.56%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 16.61%   | 18.53%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 15.02%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 15.02%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.00%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%   |
| c. Funded percentage   |                          | 102%    |
| 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.) |                          | 3.00%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 12.02%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 18.02%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 16.61%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%   |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | (0.59%) |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | (0.59%) |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 16.61%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 17.05%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 17.05%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 16.61%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 17.05%   | 16.83%  |
| b. Tier 1/Tier 2 UAL rate  | (0.59%)  | 1.05%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 16.61%   | 18.02%  |



# Data

## Demographic Information

### Employer Valuation Payroll

|                                   | General Service | Police & Fire | Total           |
|-----------------------------------|-----------------|---------------|-----------------|
| Tier 1                            | \$58,467        | \$0           | \$58,467        |
| Tier 2                            | 0               | 0             | 0               |
| Tier 1/Tier 2 valuation payroll   | 58,467          | 0             | 58,467          |
| OPSRP valuation payroll           | 19,845          | 0             | 19,845          |
| <b>Combined valuation payroll</b> | <b>\$78,312</b> | <b>\$0</b>    | <b>\$78,312</b> |

### Employer Member Census

|  | December 31 |          |          |          |          |          |          |          |
|--|-------------|----------|----------|----------|----------|----------|----------|----------|
|  | 2017        |          |          |          | 2016     |          |          |          |
|  | Tier 1      | Tier 2   | OPSRP    | Total    | Tier 1   | Tier 2   | OPSRP    | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |          |          |          |          |          |
| General Service  | 1           | 0        | 1        | 2        | 1        | 0        | 1        | 2        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 1           | 0        | 1        | 2        | 1        | 0        | 1        | 2        |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Police & Fire  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Total  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| <b>Dormant Members</b>   |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |          |          |          |          |          |
| General Service  | 1           | 0        | 0        | 1        | 1        | 0        | 0        | 1        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 1           | 0        | 0        | 1        | 1        | 0        | 0        | 1        |
| <b>Grand Total Number of Members</b>                                   | <b>2</b>    | <b>0</b> | <b>1</b> | <b>3</b> | <b>2</b> | <b>0</b> | <b>1</b> | <b>3</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          | 1        |          |          |          |          | 1        |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             |          |                         |
| 35-39           |       |                                  | 60-64                             |          |                         |
| 40-44           |       |                                  | 65-69                             |          |                         |
| 45-49           |       |                                  | 70-74                             |          |                         |
| 50-54           |       |                                  | 75-79                             |          |                         |
| 55-59           |       |                                  | 80-84                             | 1        | 574                     |
| 60-64           |       |                                  | 85-89                             |          |                         |
| 65-69           |       |                                  | 90-94                             |          |                         |
| 70-74           |       |                                  | 95-99                             |          |                         |
| 75+             |       |                                  | 100+                              |          |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      | <b>1</b> | <b>574</b>              |

## 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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October 2018

Mid-Columbia Fire And Rescue V1-801/2877  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Mid-Columbia Fire And Rescue V1-801/2877

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.



October 2018  
Mid-Columbia Fire And Rescue V1-801/2877

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**

**INDEPENDENT EMPLOYERS**

**Mid-Columbia Fire And Rescue V1-801 -- #2877**

**October 2018**

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## Executive Summary

Milliman has prepared this report for Mid-Columbia Fire And Rescue V1-801 to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Mid-Columbia Fire And Rescue V1-801.

### Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

#### ***Employer Rates Effective July 1, 2019 for Mid-Columbia Fire And Rescue V1-801***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 18.12%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 0.35%         | 0.35%           | 0.35%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>19.92%</b> | <b>10.20%</b>   | <b>14.83%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>19.98%</b> | <b>10.20%</b>   | <b>14.83%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 64%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 18.47%             | 18.47%                        |
| Minimum 2021-2023 Rate                                       | 14.78%             | 11.09%                        |
| Maximum 2021-2023 Rate                                       | 22.16%             | 25.85%                        |

# 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               | \$4,351                       | \$7,233                               | \$2,882              | 60%                  | \$107,251           | 3%  |
| 12/31/2013               | 19,554                        | 27,204                                | 7,650                | 72%                  | 1,870,603           | 0%  |
| 12/31/2014               | 34,897                        | 55,997                                | 21,100               | 62%                  | 1,889,293           | 1%  |
| 12/31/2015               | 48,957                        | 83,767                                | 34,810               | 58%                  | 2,246,752           | 2%  |
| 12/31/2016               | 66,846                        | 117,575                               | 50,729               | 57%                  | 2,020,916           | 3%  |
| 12/31/2017               | 95,455                        | 149,919                               | 54,464               | 64%                  | 2,060,380           | 3%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### ***Mid-Columbia Fire And Rescue V1-801***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$54,464                  | \$50,729          |
| Allocated pooled OPSRP UAL                       | 310,481                   | 347,925           |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 364,945                   | 398,654           |
| Combined valuation payroll                       | 2,060,380                 | 2,020,916         |
| Net pension UAL as a percentage of payroll       | 18%                       | 20%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$23,608)                | (\$275)           |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$17,159                  | \$16,452          |
| Tier 1/Tier 2 valuation payroll                                  | 94,677                    | 93,773            |
| Tier 1/Tier 2 pension normal cost rate                           | 18.12%                    | 17.54%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$149,919                 | \$117,575         |
| Actuarial asset value  | 95,455                    | 66,846            |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 54,464                    | 50,729            |
| Tier 1/ Tier 2 Funded status                                     | 64%                       | 57%               |
| Combined valuation payroll                                       | \$2,060,380               | \$2,020,916       |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 3%                        | 3%                |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 0.35%                     | 0.32%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 1                         | 1                 |
| Tier 1/Tier 2 dormant members                                    | 0                         | 0                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 0                         | 0                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

#### Milliman

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# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 2,060,380         | 2,020,916         |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$0               | \$0               |
| 2. Employer reserves                                  | 95,455            | 66,846            |
| 3. Benefits in force reserve                          | 0                 | 0                 |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$95,455</b>   | <b>\$66,846</b>   |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$66,846                                  |
| 2. Regular employer contributions   | 17,940                                    |
| 3. Benefit payments and expenses  | 0   |
| 4. Adjustments <sup>1</sup>   | (2,932)                                   |
| 5. Interest credited  | 13,601                                    |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$95,455</b>                           |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$17,159          | \$16,452          |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$17,159</b>   | <b>\$16,452</b>   |

### Change in Tier 1/Tier 2 Normal Cost

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$17,159       | \$17,159      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$149,919         | \$117,575         |
| ▪ Tier 1 General Service                 | 0                 | 0                 |
| ▪ Tier 2 Police & Fire                   | 0                 | 0                 |
| ▪ Tier 2 General Service                 | 0                 | 0                 |
| ▪ <b>Total Active Members</b>            | <b>\$149,919</b>  | <b>\$117,575</b>  |
| Dormant Members                          | 0                 | 0                 |
| Retired Members and Beneficiaries        | 0                 | 0                 |
| <b>Total Actuarial Accrued Liability</b> | <b>\$149,919</b>  | <b>\$117,575</b>  |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$149,919      | \$149,919     | \$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  | \$149,919         | \$117,575         |
| 2. Actuarial value of assets  | 95,455            | 66,846            |
| 3. Unfunded accrued liability (1. – 2.)                                       | 54,464            | 50,729            |
| 4. Funded percentage (2. ÷ 1.)  | 64%               | 57%               |
| 5. Combined valuation payroll   | \$2,060,380       | \$2,020,916       |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 3%                | 3%                |

### 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<br>December 31, 2016 | Payment | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|---------|----------|--------------------------|------------------------|
| December 31, 2013 | \$7,600                  | \$602   | \$524    | \$7,522                  | \$623                  |
| December 31, 2015 | \$27,159                 | \$1,987 | \$1,879  | \$27,051                 | \$2,057                |
| December 31, 2017 | N/A                      | N/A     | N/A      | \$19,891                 | \$1,404                |
| <b>Total</b>      |                          |         |          | <b>\$54,464</b>          | <b>\$4,084</b>         |

## Tier 1/Tier 2 Valuation Results

### Unfunded Accrued Liability (UAL)

#### **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                                  | \$117,575        |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 15,567           |
| c. Benefit payments during 2017  | 0                |
| d. Interest at 7.20% to December 31, 2017  | 9,026            |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 142,168          |
| 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.)               | 142,168          |
| 2. Actuarial accrued liability at December 31, 2017                                  | 149,919          |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (7,751)          |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 66,846           |
| b. Contributions for 2017 <sup>1</sup>   | 17,940           |
| c. Benefit payments and expenses during 2017   | 0                |
| d. Interest at 7.20% to December 31, 2017  | 5,459            |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 90,244           |
| 5. Actuarial value of assets at December 31, 2017                                    | 95,455           |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 5,210            |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>(\$2,541)</b> |

#### **Unfunded Accrued Liability Reconciliation**

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

|   |                 |
|---|-----------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$50,729</b> |
| 2. Expected increase  | 1,194           |
| 3. Liability (gain)/loss  | 7,751           |
| 4. Asset (gain)/loss  | (5,210)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0               |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$54,464</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$17,159          | \$94,677                                 | 18.12%           | \$16,452          | \$93,773                                 | 17.54%           |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| <b>Total</b>           | <b>\$17,159</b>   | <b>\$94,677</b>                          | <b>18.12%</b>    | <b>\$16,452</b>   | <b>\$93,773</b>                          | <b>17.54%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$54,464          | \$50,729          |
| 2. Next year's Tier 1/Tier 2 UAL payment | 4,084             | 3,717             |
| 3. Combined valuation payroll            | 2,060,380         | 2,020,916         |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 0.20%             | 0.18%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 18.12%   | 17.54%  |
| b. Tier 1/Tier 2 UAL rate                             | 0.20%  | 0.18%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 18.47%   | 17.86%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |        |
|--|--------------------------|--------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 16.95% |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%  |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 16.95% |
| 4. Size of rate collar   |                          |        |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.39%  |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.39%  |
| c. Funded percentage   |                          | 64%    |
| 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.) |                          | 5.42%  |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 11.53% |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 22.37% |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 18.47% |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%  |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 0.20%  |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 0.20%  |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 18.47% |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%  |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%  |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 18.12% |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 18.12% |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 18.47% |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 18.12%   | 17.54%  |
| b. Tier 1/Tier 2 UAL rate  | 0.20%  | 0.18%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 18.47%   | 17.86%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service | Police & Fire      | Total              |
|-----------------------------------|-----------------|--------------------|--------------------|
| Tier 1                            | \$0             | \$94,677           | \$94,677           |
| Tier 2                            | 0               | 0                  | 0                  |
| Tier 1/Tier 2 valuation payroll   | 0               | 94,677             | 94,677             |
| OPSRP valuation payroll           | 60,884          | 1,904,820          | 1,965,703          |
| <b>Combined valuation payroll</b> | <b>\$60,884</b> | <b>\$1,999,497</b> | <b>\$2,060,380</b> |

### *Employer Member Census*

|  | December 31 |          |           |           |          |          |           |           |
|--|-------------|----------|-----------|-----------|----------|----------|-----------|-----------|
|  | 2017        |          |           |           | 2016     |          |           |           |
|  | Tier 1      | Tier 2   | OPSRP     | Total     | Tier 1   | Tier 2   | OPSRP     | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |          |           |           |          |          |           |           |
| General Service  | 0           | 0        | 1         | 1         | 0        | 0        | 1         | 1         |
| Police & Fire  | 1           | 0        | 20        | 21        | 1        | 0        | 18        | 19        |
| Total  | 1           | 0        | 21        | 22        | 1        | 0        | 19        | 20        |
| <b>Active Members with previous service segments with the employer</b> |             |          |           |           |          |          |           |           |
| General Service  | 0           | 0        | N/A       | 0         | 0        | 0        | N/A       | 0         |
| Police & Fire  | 0           | 0        | N/A       | 0         | 0        | 0        | N/A       | 0         |
| Total  | 0           | 0        | N/A       | 0         | 0        | 0        | N/A       | 0         |
| <b>Dormant Members</b>   |             |          |           |           |          |          |           |           |
| General Service  | 0           | 0        | 0         | 0         | 0        | 0        | 0         | 0         |
| Police & Fire  | 0           | 0        | 1         | 1         | 0        | 0        | 0         | 0         |
| Total  | 0           | 0        | 1         | 1         | 0        | 0        | 0         | 0         |
| <b>Retired Members and Beneficiaries</b>                               |             |          |           |           |          |          |           |           |
| General Service  | 0           | 0        | 0         | 0         | 0        | 0        | 0         | 0         |
| Police & Fire  | 0           | 0        | 1         | 1         | 0        | 0        | 1         | 1         |
| Total  | 0           | 0        | 1         | 1         | 0        | 0        | 1         | 1         |
| <b>Grand Total Number of Members</b>                                   | <b>1</b>    | <b>0</b> | <b>23</b> | <b>24</b> | <b>1</b> | <b>0</b> | <b>20</b> | <b>21</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          | 1        |          |          |          |          | 1        |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             |       |                         |
| 35-39           |       |                                  | 60-64                             |       |                         |
| 40-44           |       |                                  | 65-69                             |       |                         |
| 45-49           |       |                                  | 70-74                             |       |                         |
| 50-54           |       |                                  | 75-79                             |       |                         |
| 55-59           |       |                                  | 80-84                             |       |                         |
| 60-64           |       |                                  | 85-89                             |       |                         |
| 65-69           |       |                                  | 90-94                             |       |                         |
| 70-74           |       |                                  | 95-99                             |       |                         |
| 75+             |       |                                  | 100+                              |       |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      |       |                         |

## 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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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.



October 2018

Millington Rural Fire Protection District/2782  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Millington Rural Fire Protection District/2782

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.



October 2018  
Millington Rural Fire Protection District/2782

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**

**INDEPENDENT EMPLOYERS**

**Millington Rural Fire Protection District -- #2782**

**October 2018**

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## Executive Summary

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

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Millington Rural Fire Protection District.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Millington Rural Fire Protection District***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 23.66%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | (12.19%)      | (12.19%)        | (12.19%)      |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>12.92%</b> | <b>0.00%</b>    | <b>2.29%</b>  |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>12.98%</b> | <b>0.00%</b>    | <b>2.29%</b>  |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 111%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 11.47%             | 11.47%                        |
| Minimum 2021-2023 Rate                                       | 8.47%              | 5.47%                         |
| Maximum 2021-2023 Rate                                       | 14.47%             | 17.47%                        |

# 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               | \$298,900                     | \$214,629                             | (\$84,271)           | 139%                 | \$52,504            | (161%)  |
| 12/31/2013               | 343,781                       | 233,282                               | (110,499)            | 147%                 | 53,819              | (205%)  |
| 12/31/2014               | 371,916                       | 290,282                               | (81,634)             | 128%                 | 55,985              | (146%)  |
| 12/31/2015               | 388,614                       | 319,423                               | (69,191)             | 122%                 | 58,225              | (119%)  |
| 12/31/2016               | 418,025                       | 271,881                               | (146,144)            | 154%                 | 60,395              | (242%)  |
| 12/31/2017               | 479,705                       | 432,634                               | (47,071)             | 111%                 | 64,639              | (73%)   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Millington Rural Fire Protection District***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | (\$47,071)                | (\$146,144)       |
| Allocated pooled OPSRP UAL                       | 9,741                     | 10,398            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | (37,330)                  | (135,746)         |
| Combined valuation payroll                       | 64,639                    | 60,395            |
| Net pension UAL as a percentage of payroll       | (58%)                     | (225%)            |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$741)                   | (\$8)             |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$15,293                  | \$10,974          |
| Tier 1/Tier 2 valuation payroll                                  | 64,639                    | 60,395            |
| Tier 1/Tier 2 pension normal cost rate                           | 23.66%                    | 21.21%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$432,634                 | \$271,881         |
| Actuarial asset value  | 479,705                   | 418,025           |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | (47,071)                  | (146,144)         |
| Tier 1/ Tier 2 Funded status                                     | 111%                      | 154%              |
| Combined valuation payroll                                       | \$64,639                  | \$60,395          |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | (73%)                     | (242%)            |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | (12.19%)                  | (15.70%)          |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 1                         | 1                 |
| Tier 1/Tier 2 dormant members                                    | 0                         | 0                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 0                         | 0                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 64,639            | 60,395            |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | 0.00%             | 0.00%             |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$114,099         | \$105,639         |
| 2. Employer reserves                                  | 365,606           | 312,386           |
| 3. Benefits in force reserve                          | 0                 | 0                 |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$479,705</b>  | <b>\$418,025</b>  |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$418,025                                 |
| 2. Regular employer contributions   | 4,366                                     |
| 3. Benefit payments and expenses  | 0   |
| 4. Adjustments <sup>1</sup>   | 425                                       |
| 5. Interest credited  | 56,888                                    |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$479,705</b>                          |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$15,293          | \$0               |
| Tier 1 General Service | 0                 | 10,974            |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$15,293</b>   | <b>\$10,974</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$15,293       | \$15,293      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$432,634         | \$266,935         |
| ▪ Tier 1 General Service                 | 0                 | 4,946             |
| ▪ Tier 2 Police & Fire                   | 0                 | 0                 |
| ▪ Tier 2 General Service                 | 0                 | 0                 |
| ▪ <b>Total Active Members</b>            | <b>\$432,634</b>  | <b>\$271,881</b>  |
| Dormant Members                          | 0                 | 0                 |
| Retired Members and Beneficiaries        | 0                 | 0                 |
| <b>Total Actuarial Accrued Liability</b> | <b>\$432,634</b>  | <b>\$271,881</b>  |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$432,634      | \$432,634     | \$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  | \$432,634         | \$271,881         |
| 2. Actuarial value of assets  | 479,705           | 418,025           |
| 3. Unfunded accrued liability (1. – 2.)                                       | (47,071)          | (146,144)         |
| 4. Funded percentage (2. ÷ 1.)  | 111%              | 154%              |
| 5. Combined valuation payroll   | \$64,639          | \$60,395          |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | (73%)             | (242%)            |

### 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<br>December 31, 2016 | Payment   | Interest  | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|-----------|-----------|--------------------------|------------------------|
| December 31, 2013 | (\$109,767)              | (\$8,699) | (\$7,569) | (\$108,637)              | (\$9,004)              |
| December 31, 2015 | \$41,213                 | \$3,016   | \$2,852   | \$41,049                 | \$3,121                |
| December 31, 2017 | N/A                      | N/A       | N/A       | \$20,517                 | \$1,449                |
| <b>Total</b>      |                          |           |           | <b>(\$47,071)</b>        | <b>(\$4,434)</b>       |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$271,881          |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 10,384             |
| c. Benefit payments during 2017  | 0                  |
| d. Interest at 7.20% to December 31, 2017  | 19,949             |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 302,214            |
| 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.)               | 302,214            |
| 2. Actuarial accrued liability at December 31, 2017                                  | 432,634            |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (130,420)          |
| 4. Expected actuarial value of assets  |                    |
| a. Actuarial value of assets at December 31, 2016                                    | 418,025            |
| b. Contributions for 2017 <sup>1</sup>   | 4,366              |
| c. Benefit payments and expenses during 2017   | 0                  |
| d. Interest at 7.20% to December 31, 2017  | 30,255             |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 452,646            |
| 5. Actuarial value of assets at December 31, 2017                                    | 479,705            |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 27,058             |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>(\$103,362)</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                    |
|---|--------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>(\$146,144)</b> |
| 2. Expected increase  | (4,289)            |
| 3. Liability (gain)/loss  | 130,420            |
| 4. Asset (gain)/loss  | (27,058)           |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                  |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>(\$47,071)</b>  |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$15,293          | \$64,639                                 | 23.66%           | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 10,974            | 60,395                                   | 18.17%           |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| <b>Total</b>           | <b>\$15,293</b>   | <b>\$64,639</b>                          | <b>23.66%</b>    | <b>\$10,974</b>   | <b>\$60,395</b>                          | <b>18.17%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | (\$47,071)        | (\$146,144)       |
| 2. Next year's Tier 1/Tier 2 UAL payment | (4,434)           | (11,161)          |
| 3. Combined valuation payroll            | 64,639            | 60,395            |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | (6.86%)           | (18.48%)          |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 23.66%   | 18.17%  |
| b. Tier 1/Tier 2 UAL rate                             | (6.86%)  | (18.48%)  |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 16.95%   | (0.17%)   |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |          |
|--|--------------------------|----------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 8.47%    |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%    |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 8.47%    |
| 4. Size of rate collar   |                          |          |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 1.69%    |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%    |
| c. Funded percentage   |                          | 111%     |
| 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.) |                          | 3.00%    |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 5.47%    |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 11.47%   |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 16.95%   |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (5.48%)  |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | (6.86%)  |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | (12.34%) |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 11.47%   |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%    |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%    |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 23.66%   |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 23.66%   |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 11.47%   |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates        |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate | 23.66%   | 21.21%  |
| b. Tier 1/Tier 2 UAL rate                          | (12.34%)   | (15.84%)  |
| c. Multnomah Fire District #10 rate                | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate                | 11.47%   | 5.51%   |
| <i>(a. + b. + c., minimum of 5.94%)</i>            |  |   |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service | Police & Fire   | Total           |
|-----------------------------------|-----------------|-----------------|-----------------|
| Tier 1                            | \$0             | \$64,639        | \$64,639        |
| Tier 2                            | 0               | 0               | 0               |
| Tier 1/Tier 2 valuation payroll   | 0               | 64,639          | 64,639          |
| OPSRP valuation payroll           | 0               | 0               | 0               |
| <b>Combined valuation payroll</b> | <b>\$0</b>      | <b>\$64,639</b> | <b>\$64,639</b> |

### *Employer Member Census*

|  | December 31 |          |          |          |          |          |          |          |
|--|-------------|----------|----------|----------|----------|----------|----------|----------|
|  | 2017        |          |          |          | 2016     |          |          |          |
|  | Tier 1      | Tier 2   | OPSRP    | Total    | Tier 1   | Tier 2   | OPSRP    | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 1        | 0        | 0        | 1        |
| Police & Fire  | 1           | 0        | 0        | 1        | 0        | 0        | 0        | 0        |
| Total  | 1           | 0        | 0        | 1        | 1        | 0        | 0        | 1        |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Police & Fire  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Total  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| <b>Dormant Members</b>   |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Grand Total Number of Members</b>                                   | <b>1</b>    | <b>0</b> | <b>0</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          | 1        |          |          |          |          | 1        |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             |       |                         |
| 35-39           |       |                                  | 60-64                             |       |                         |
| 40-44           |       |                                  | 65-69                             |       |                         |
| 45-49           |       |                                  | 70-74                             |       |                         |
| 50-54           |       |                                  | 75-79                             |       |                         |
| 55-59           |       |                                  | 80-84                             |       |                         |
| 60-64           |       |                                  | 85-89                             |       |                         |
| 65-69           |       |                                  | 90-94                             |       |                         |
| 70-74           |       |                                  | 95-99                             |       |                         |
| 75+             |       |                                  | 100+                              |       |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      |       |                         |

## 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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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.



October 2018

Mt Angel Fire District/2861  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Mt Angel Fire District/2861

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.



October 2018  
Mt Angel Fire District/2861

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**

**INDEPENDENT EMPLOYERS**

**Mt Angel Fire District -- #2861**

**October 2018**

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# Executive Summary

Milliman has prepared this report for Mt Angel Fire District to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Mt Angel Fire District.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### *Employer Rates Effective July 1, 2019 for Mt Angel Fire District*

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 19.51%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | (1.34%)       | (1.34%)         | (1.34%)       |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>19.62%</b> | <b>8.51%</b>    | <b>13.14%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>19.68%</b> | <b>8.51%</b>    | <b>13.14%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 74%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 18.17%             | 18.17%                        |
| Minimum 2021-2023 Rate                                       | 14.54%             | 10.91%                        |
| Maximum 2021-2023 Rate                                       | 21.80%             | 25.43%                        |

# 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               | \$7,147                       | \$0                                   | (\$7,147)            | 0%                   | \$15,167            | (47%)   |
| 12/31/2013               | 7,909                         | 1,744                                 | (6,165)              | 453%                 | 30,273              | (20%)   |
| 12/31/2014               | 8,867                         | 7,355                                 | (1,512)              | 121%                 | 63,558              | (2%)  |
| 12/31/2015               | 10,084                        | 12,500                                | 2,416                | 81%                  | 67,239              | 4%  |
| 12/31/2016               | 14,006                        | 20,413                                | 6,407                | 69%                  | 81,734              | 8%  |
| 12/31/2017               | 20,144                        | 27,139                                | 6,995                | 74%                  | 75,857              | 9%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### ***Mt Angel Fire District***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$6,995                   | \$6,407           |
| Allocated pooled OPSRP UAL                       | 11,431                    | 14,072            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 18,426                    | 20,479            |
| Combined valuation payroll                       | 75,857                    | 81,734            |
| Net pension UAL as a percentage of payroll       | 24%                       | 25%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$869)                   | (\$11)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$7,159                   | \$6,722           |
| Tier 1/Tier 2 valuation payroll                                  | 36,698                    | 34,831            |
| Tier 1/Tier 2 pension normal cost rate                           | 19.51%                    | 19.30%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$27,139                  | \$20,413          |
| Actuarial asset value  | 20,144                    | 14,006            |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 6,995                     | 6,407             |
| Tier 1/ Tier 2 Funded status                                     | 74%                       | 69%               |
| Combined valuation payroll                                       | \$75,857                  | \$81,734          |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 9%                        | 8%                |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | (1.34%)                   | (0.83%)           |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 0                         | 0                 |
| Tier 1/Tier 2 dormant members                                    | 0                         | 0                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 0                         | 0                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 75,857            | 81,734            |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$0               | \$0               |
| 2. Employer reserves                                  | 20,144            | 14,006            |
| 3. Benefits in force reserve                          | 0                 | 0                 |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$20,144</b>   | <b>\$14,006</b>   |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$14,006                                  |
| 2. Regular employer contributions   | 3,516                                     |
| 3. Benefit payments and expenses  | 0   |
| 4. Adjustments <sup>1</sup>   | (105)                                     |
| 5. Interest credited  | 2,728                                     |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$20,144</b>                           |

<sup>1</sup> 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.

## Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 7,159             | 6,722             |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$7,159</b>    | <b>\$6,722</b>    |

#### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$7,159        | \$7,159       | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$0               | \$0               |
| ▪ Tier 1 General Service                 | 0                 | 0                 |
| ▪ Tier 2 Police & Fire                   | 27,139            | 20,413            |
| ▪ Tier 2 General Service                 | 0                 | 0                 |
| ▪ <b>Total Active Members</b>            | <b>\$27,139</b>   | <b>\$20,413</b>   |
| Dormant Members                          | 0                 | 0                 |
| Retired Members and Beneficiaries        | 0                 | 0                 |
| <b>Total Actuarial Accrued Liability</b> | <b>\$27,139</b>   | <b>\$20,413</b>   |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$27,139       | \$27,139      | \$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  | \$27,139          | \$20,413          |
| 2. Actuarial value of assets  | 20,144            | 14,006            |
| 3. Unfunded accrued liability (1. – 2.)                                       | 6,995             | 6,407             |
| 4. Funded percentage (2. ÷ 1.)  | 74%               | 69%               |
| 5. Combined valuation payroll   | \$75,857          | \$81,734          |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 9%                | 8%                |

### 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<br>December 31, 2016 | Payment | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|---------|----------|--------------------------|------------------------|
| December 31, 2013 | (\$6,124)                | (\$485) | (\$422)  | (\$6,061)                | (\$502)                |
| December 31, 2015 | \$8,573                  | \$627   | \$593    | \$8,539                  | \$649                  |
| December 31, 2017 | N/A                      | N/A     | N/A      | \$4,517                  | \$319                  |
| <b>Total</b>      |                          |         |          | <b>\$6,995</b>           | <b>\$466</b>           |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### *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                                  | \$20,413       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 6,722          |
| c. Benefit payments during 2017  | 0              |
| d. Interest at 7.20% to December 31, 2017  | 1,712          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 28,847         |
| 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.)               | 28,847         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 27,139         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 1,708          |
| 4. Expected actuarial value of assets  |                |
| a. Actuarial value of assets at December 31, 2016                                    | 14,006         |
| b. Contributions for 2017 <sup>1</sup>   | 3,516          |
| c. Benefit payments and expenses during 2017   | 0              |
| d. Interest at 7.20% to December 31, 2017  | 1,135          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 18,656         |
| 5. Actuarial value of assets at December 31, 2017                                    | 20,144         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 1,488          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$3,196</b> |

### *Unfunded Accrued Liability Reconciliation*

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

|   |                |
|---|----------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$6,407</b> |
| 2. Expected increase  | 3,784          |
| 3. Liability (gain)/loss  | (1,708)        |
| 4. Asset (gain)/loss  | (1,488)        |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0              |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$6,995</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017 |   |                        | December 31, 2016 |   |                        |
|------------------------|-------------------|---|------------------------|-------------------|---|------------------------|
|                        | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$0               | \$0   | 0.00%                  | \$0               | \$0   | 0.00%                  |
| Tier 1 General Service | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 Police & Fire   | 7,159             | 36,698  | 19.51%                 | 6,722             | 34,831  | 19.30%                 |
| Tier 2 General Service | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| <b>Total</b>           | <b>\$7,159</b>    | <b>\$36,698</b>                                   | <b>19.51%</b>          | <b>\$6,722</b>    | <b>\$34,831</b>                                   | <b>19.30%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$6,995           | \$6,407           |
| 2. Next year's Tier 1/Tier 2 UAL payment | 466               | 421               |
| 3. Combined valuation payroll            | 75,857            | 81,734            |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 0.61%             | 0.52%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 19.51%   | 19.30%  |
| b. Tier 1/Tier 2 UAL rate                             | 0.61%  | 0.52%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 20.27%   | 19.96%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 15.14%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 15.14%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.03%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.03%   |
| c. Funded percentage   |                          | 74%     |
| 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.) |                          | 3.03%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 12.11%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 18.17%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 20.27%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (2.10%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 0.61%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | (1.49%) |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 18.17%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 19.51%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 19.51%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 18.17%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates        |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate | 19.51%   | 19.30%  |
| b. Tier 1/Tier 2 UAL rate                          | (1.49%)  | (0.97%)   |
| c. Multnomah Fire District #10 rate                | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate                | 18.17%   | 18.47%  |
| <i>(a. + b. + c., minimum of 5.94%)</i>            |  |   |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service | Police & Fire   | Total           |
|-----------------------------------|-----------------|-----------------|-----------------|
| Tier 1                            | \$0             | \$0             | \$0             |
| Tier 2                            | 0               | 36,698          | 36,698          |
| Tier 1/Tier 2 valuation payroll   | 0               | 36,698          | 36,698          |
| OPSRP valuation payroll           | 39,159          | 0               | 39,159          |
| <b>Combined valuation payroll</b> | <b>\$39,159</b> | <b>\$36,698</b> | <b>\$75,857</b> |

### *Employer Member Census*

|  | December 31 |          |          |          |          |          |          |          |
|--|-------------|----------|----------|----------|----------|----------|----------|----------|
|  | 2017        |          |          |          | 2016     |          |          |          |
|  | Tier 1      | Tier 2   | OPSRP    | Total    | Tier 1   | Tier 2   | OPSRP    | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 1        | 1        | 0        | 0        | 1        | 1        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 1        | 1        | 0        | 0        | 1        | 1        |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | N/A      | 0        | 0        | 1        | N/A      | 1        |
| Police & Fire  | 0           | 2        | N/A      | 2        | 0        | 2        | N/A      | 2        |
| Total  | 0           | 2        | N/A      | 2        | 0        | 3        | N/A      | 3        |
| <b>Dormant Members</b>   |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 1        | 1        | 0        | 0        | 1        | 1        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 1        | 1        | 0        | 0        | 1        | 1        |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Grand Total Number of Members</b>                                   | <b>0</b>    | <b>2</b> | <b>2</b> | <b>4</b> | <b>0</b> | <b>3</b> | <b>2</b> | <b>5</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             |       |                         |
| 35-39           |       |                                  | 60-64                             |       |                         |
| 40-44           |       |                                  | 65-69                             |       |                         |
| 45-49           |       |                                  | 70-74                             |       |                         |
| 50-54           |       |                                  | 75-79                             |       |                         |
| 55-59           |       |                                  | 80-84                             |       |                         |
| 60-64           |       |                                  | 85-89                             |       |                         |
| 65-69           |       |                                  | 90-94                             |       |                         |
| 70-74           |       |                                  | 95-99                             |       |                         |
| 75+             |       |                                  | 100+                              |       |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      |       |                         |

# 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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October 2018

Nehalem Bay Wastewater Agency/2724  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
Nehalem Bay Wastewater Agency/2724

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.



October 2018  
Nehalem Bay Wastewater Agency/2724

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.

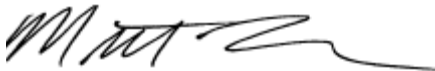
The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.


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, 2017**

## **OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM**

**INDEPENDENT EMPLOYERS**

**Nehalem Bay Wastewater Agency -- #2724**

**October 2018**

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## Executive Summary

Milliman has prepared this report for Nehalem Bay Wastewater Agency to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Nehalem Bay Wastewater Agency.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Nehalem Bay Wastewater Agency***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 16.59%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | (2.18%)       | (2.18%)         | (2.18%)       |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>15.86%</b> | <b>7.67%</b>    | <b>12.30%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>15.92%</b> | <b>7.67%</b>    | <b>12.30%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 92%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 14.41%             | 14.41%                        |
| Minimum 2021-2023 Rate                                       | 11.41%             | 8.41%                         |
| Maximum 2021-2023 Rate                                       | 17.41%             | 20.41%                        |

# 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               | \$1,530,538                   | \$1,473,807                           | (\$56,731)           | 104%                 | \$328,849           | (17%)   |
| 12/31/2013               | 1,718,009                     | 1,554,879                             | (163,130)            | 110%                 | 349,854             | (47%)   |
| 12/31/2014               | 1,791,852                     | 1,869,020                             | 77,168               | 96%                  | 374,854             | 21%   |
| 12/31/2015               | 1,790,526                     | 1,982,332                             | 191,806              | 90%                  | 337,025             | 57%   |
| 12/31/2016               | 1,839,443                     | 2,139,207                             | 299,764              | 86%                  | 402,363             | 75%   |
| 12/31/2017               | 2,043,588                     | 2,231,725                             | 188,137              | 92%                  | 448,235             | 42%   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### ***Nehalem Bay Wastewater Agency***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$188,137                 | \$299,764         |
| Allocated pooled OPSRP UAL                       | 67,545                    | 69,272            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 255,682                   | 369,036           |
| Combined valuation payroll                       | 448,235                   | 402,363           |
| Net pension UAL as a percentage of payroll       | 57%                       | 92%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$5,136)                 | (\$55)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$29,899                  | \$28,482          |
| Tier 1/Tier 2 valuation payroll                                  | 180,212                   | 172,826           |
| Tier 1/Tier 2 pension normal cost rate                           | 16.59%                    | 16.48%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$2,231,725               | \$2,139,207       |
| Actuarial asset value  | 2,043,588                 | 1,839,443         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 188,137                   | 299,764           |
| Tier 1/ Tier 2 Funded status                                     | 92%                       | 86%               |
| Combined valuation payroll                                       | \$448,235                 | \$402,363         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 42%                       | 75%               |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | (2.18%)                   | (2.07%)           |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 2                         | 2                 |
| Tier 1/Tier 2 dormant members                                    | 0                         | 0                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 5                         | 5                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

## Side Account Information

### Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

### 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 448,235           | 402,363           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | 0.00%             | 0.00%             |

<sup>1</sup> 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.

## Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$344,726          | \$319,167          |
| 2. Employer reserves                                  | 1,211,817          | 1,047,285          |
| 3. Benefits in force reserve                          | 487,045            | 472,991            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$2,043,588</b> | <b>\$1,839,443</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$1,839,443                               |
| 2. Regular employer contributions   | 2,890                                     |
| 3. Benefit payments and expenses  | (90,724)                                  |
| 4. Adjustments <sup>1</sup>   | 42,088                                    |
| 5. Interest credited  | 249,892                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$2,043,588</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 29,899            | 28,482            |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$29,899</b>   | <b>\$28,482</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$29,899       | \$29,899      | \$0        |



## Tier 1/Tier 2 Valuation Results

### Liabilities

#### ***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.

#### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017  | December 31, 2016  |
|--|--------------------|--------------------|
| Active Members                           |                    |                    |
| ▪ Tier 1 Police & Fire                   | \$0                | \$0                |
| ▪ Tier 1 General Service                 | 1,128,524          | 1,022,170          |
| ▪ Tier 2 Police & Fire                   | 0                  | 0                  |
| ▪ Tier 2 General Service                 | 0                  | 0                  |
| ▪ <b>Total Active Members</b>            | <b>\$1,128,524</b> | <b>\$1,022,170</b> |
| Dormant Members                          | 0                  | 0                  |
| Retired Members and Beneficiaries        | 1,103,201          | 1,117,037          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$2,231,725</b> | <b>\$2,139,207</b> |

#### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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 | \$2,231,725    | \$2,231,725   | \$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  | \$2,231,725       | \$2,139,207       |
| 2. Actuarial value of assets  | 2,043,588         | 1,839,443         |
| 3. Unfunded accrued liability (1. – 2.)                                       | 188,137           | 299,764           |
| 4. Funded percentage (2. ÷ 1.)  | 92%               | 86%               |
| 5. Combined valuation payroll   | \$448,235         | \$402,363         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 42%               | 75%               |

#### 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<br>December 31, 2016 | Payment    | Interest   | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|------------|------------|--------------------------|------------------------|
| December 31, 2013 | (\$162,049)              | (\$12,843) | (\$11,175) | (\$160,381)              | (\$13,292)             |
| December 31, 2015 | \$354,721                | \$25,956   | \$24,544   | \$353,309                | \$26,866               |
| December 31, 2017 | N/A                      | N/A        | N/A        | (\$4,791)                | (\$338)                |
| <b>Total</b>      |                          |            |            | <b>\$188,137</b>         | <b>\$13,236</b>        |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$2,139,207      |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 26,950           |
| c. Benefit payments during 2017  | (90,025)         |
| d. Interest at 7.20% to December 31, 2017  | 151,752          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 2,227,884        |
| 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.)               | 2,227,884        |
| 2. Actuarial accrued liability at December 31, 2017                                  | 2,231,725        |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (3,841)          |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 1,839,443        |
| b. Contributions for 2017 <sup>1</sup>   | 2,890            |
| c. Benefit payments and expenses during 2017   | (90,724)         |
| d. Interest at 7.20% to December 31, 2017  | 129,278          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 1,880,886        |
| 5. Actuarial value of assets at December 31, 2017                                    | 2,043,588        |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 162,702          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$158,861</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$299,764</b> |
| 2. Expected increase  | 47,234           |
| 3. Liability (gain)/loss  | 3,841            |
| 4. Asset (gain)/loss  | (162,702)        |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$188,137</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017 |   |                        | December 31, 2016 |   |                        |
|------------------------|-------------------|---|------------------------|-------------------|---|------------------------|
|                        | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$0               | \$0   | 0.00%                  | \$0               | \$0   | 0.00%                  |
| Tier 1 General Service | 29,899            | 180,212   | 16.59%                 | 28,482            | 172,826   | 16.48%                 |
| Tier 2 Police & Fire   | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 General Service | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| <b>Total</b>           | <b>\$29,899</b>   | <b>\$180,212</b>                                  | <b>16.59%</b>          | <b>\$28,482</b>   | <b>\$172,826</b>                                  | <b>16.48%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$188,137         | \$299,764         |
| 2. Next year's Tier 1/Tier 2 UAL payment | 13,236            | 20,674            |
| 3. Combined valuation payroll            | 448,235           | 402,363           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 2.95%             | 5.14%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 16.59%   | 16.48%  |
| b. Tier 1/Tier 2 UAL rate                             | 2.95%  | 5.14%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 19.69%   | 21.76%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 11.41%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 11.41%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 2.28%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%   |
| c. Funded percentage   |                          | 92%     |
| 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.) |                          | 3.00%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 8.41%   |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 14.41%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 19.69%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (5.28%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 2.95%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | (2.33%) |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 14.41%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 16.59%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 16.59%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 14.41%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 16.59%   | 16.48%  |
| b. Tier 1/Tier 2 UAL rate  | (2.33%)  | (2.21%)   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 14.41%   | 14.41%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$180,212        | \$0           | \$180,212        |
| Tier 2                            | 0                | 0             | 0                |
| Tier 1/Tier 2 valuation payroll   | 180,212          | 0             | 180,212          |
| OPSRP valuation payroll           | 268,023          | 0             | 268,023          |
| <b>Combined valuation payroll</b> | <b>\$448,235</b> | <b>\$0</b>    | <b>\$448,235</b> |

### *Employer Member Census*

|  | December 31 |          |          |           |          |          |          |           |
|--|-------------|----------|----------|-----------|----------|----------|----------|-----------|
|  | 2017        |          |          |           | 2016     |          |          |           |
|  | Tier 1      | Tier 2   | OPSRP    | Total     | Tier 1   | Tier 2   | OPSRP    | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |           |          |          |          |           |
| General Service  | 2           | 0        | 5        | 7         | 2        | 0        | 4        | 6         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Total  | 2           | 0        | 5        | 7         | 2        | 0        | 4        | 6         |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |           |          |          |          |           |
| General Service  | 0           | 0        | N/A      | 0         | 0        | 0        | N/A      | 0         |
| Police & Fire  | 0           | 0        | N/A      | 0         | 0        | 0        | N/A      | 0         |
| Total  | 0           | 0        | N/A      | 0         | 0        | 0        | N/A      | 0         |
| <b>Dormant Members</b>   |             |          |          |           |          |          |          |           |
| General Service  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Total  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |           |          |          |          |           |
| General Service  | 5           | 0        | 1        | 6         | 5        | 0        | 1        | 6         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Total  | 5           | 0        | 1        | 6         | 5        | 0        | 1        | 6         |
| <b>Grand Total Number of Members</b>                                   | <b>7</b>    | <b>0</b> | <b>6</b> | <b>13</b> | <b>7</b> | <b>0</b> | <b>5</b> | <b>12</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          | 1        |          |          |          | 1        |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          | 1        |          |          |          | 1        |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             |          |                         |
| 35-39           |       |                                  | 60-64                             | 1        | 1,740                   |
| 40-44           |       |                                  | 65-69                             | 2        | 1,851                   |
| 45-49           |       |                                  | 70-74                             | 2        | 764                     |
| 50-54           |       |                                  | 75-79                             |          |                         |
| 55-59           |       |                                  | 80-84                             |          |                         |
| 60-64           |       |                                  | 85-89                             |          |                         |
| 65-69           |       |                                  | 90-94                             |          |                         |
| 70-74           |       |                                  | 95-99                             |          |                         |
| 75+             |       |                                  | 100+                              |          |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      | <b>5</b> | <b>1,394</b>            |

## 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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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.



October 2018

Neskowin Regional Sanitary Authority/2740  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018

Neskowin Regional Sanitary Authority/2740

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.



October 2018  
Neskowin Regional Sanitary Authority/2740

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**

**INDEPENDENT EMPLOYERS**

**Neskowin Regional Sanitary Authority -- #2740**

**October 2018**

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## Executive Summary

Milliman has prepared this report for Neskowin Regional Sanitary Authority to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Neskowin Regional Sanitary Authority.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Neskowin Regional Sanitary Authority***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 14.26%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | (3.80%)       | (3.80%)         | (3.80%)       |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>11.91%</b> | <b>6.05%</b>    | <b>10.68%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>11.97%</b> | <b>6.05%</b>    | <b>10.68%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 138%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 10.46%             | 10.46%                        |
| Minimum 2021-2023 Rate                                       | 7.46%              | 4.46%                         |
| Maximum 2021-2023 Rate                                       | 13.46%             | 16.46%                        |

# 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               | \$215,562                     | \$162,032                             | (\$53,530)           | 133%                 | \$178,643           | (30%)   |
| 12/31/2013               | 246,337                       | 176,503                               | (69,834)             | 140%                 | 183,027             | (38%)   |
| 12/31/2014               | 258,803                       | 192,267                               | (66,536)             | 135%                 | 188,956             | (35%)   |
| 12/31/2015               | 260,184                       | 194,052                               | (66,132)             | 134%                 | 195,204             | (34%)   |
| 12/31/2016               | 278,266                       | 213,820                               | (64,446)             | 130%                 | 149,176             | (43%)   |
| 12/31/2017               | 321,556                       | 232,524                               | (89,032)             | 138%                 | 179,925             | (49%)   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Neskowin Regional Sanitary Authority***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | (\$89,032)                | (\$64,446)        |
| Allocated pooled OPSRP UAL                       | 27,113                    | 25,682            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | (61,919)                  | (38,764)          |
| Combined valuation payroll                       | 179,925                   | 149,176           |
| Net pension UAL as a percentage of payroll       | (34%)                     | (26%)             |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$2,062)                 | (\$20)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$8,384                   | \$8,027           |
| Tier 1/Tier 2 valuation payroll                                  | 58,808                    | 56,669            |
| Tier 1/Tier 2 pension normal cost rate                           | 14.26%                    | 14.16%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$232,524                 | \$213,820         |
| Actuarial asset value  | 321,556                   | 278,266           |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | (89,032)                  | (64,446)          |
| Tier 1/ Tier 2 Funded status                                     | 138%                      | 130%              |
| Combined valuation payroll                                       | \$179,925                 | \$149,176         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | (49%)                     | (43%)             |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | (3.80%)                   | (3.31%)           |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 1                         | 1                 |
| Tier 1/Tier 2 dormant members                                    | 1                         | 1                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 2                         | 2                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

## Side Account Information

### Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

### 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 179,925           | 149,176           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | 0.00%             | 0.00%             |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$25,811          | \$23,300          |
| 2. Employer reserves                                  | 282,869           | 242,578           |
| 3. Benefits in force reserve                          | 12,877            | 12,389            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$321,556</b>  | <b>\$278,266</b>  |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$278,266                                 |
| 2. Regular employer contributions   | 2,631                                     |
| 3. Benefit payments and expenses  | (2,399)                                   |
| 4. Adjustments <sup>1</sup>   | 1,026                                     |
| 5. Interest credited  | 42,032                                    |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$321,556</b>                          |

<sup>1</sup> 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.

## Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 8,384             | 8,027             |
| <b>Total</b>           | <b>\$8,384</b>    | <b>\$8,027</b>    |

#### *Change in Tier 1/Tier 2 Normal Cost*

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

|             | Before<br>Changes | After<br>Changes | Net<br>Change |
|-------------|-------------------|------------------|---------------|
| Normal Cost | \$8,384           | \$8,384          | \$0           |



## Tier 1/Tier 2 Valuation Results

### Liabilities

#### ***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.

#### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$0               | \$0               |
| ▪ Tier 1 General Service                 | 0                 | 0                 |
| ▪ Tier 2 Police & Fire                   | 0                 | 0                 |
| ▪ Tier 2 General Service                 | 165,189           | 148,946           |
| ▪ <b>Total Active Members</b>            | <b>\$165,189</b>  | <b>\$148,946</b>  |
| Dormant Members                          | 38,168            | 35,617            |
| Retired Members and Beneficiaries        | 29,166            | 29,257            |
| <b>Total Actuarial Accrued Liability</b> | <b>\$232,524</b>  | <b>\$213,820</b>  |

#### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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 | \$232,524      | \$232,524     | \$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  | \$232,524         | \$213,820         |
| 2. Actuarial value of assets  | 321,556           | 278,266           |
| 3. Unfunded accrued liability (1. – 2.)                                       | (89,032)          | (64,446)          |
| 4. Funded percentage (2. ÷ 1.)  | 138%              | 130%              |
| 5. Combined valuation payroll   | \$179,925         | \$149,176         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | (49%)             | (43%)             |

#### 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<br>December 31, 2016 | Payment   | Interest  | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|-----------|-----------|--------------------------|------------------------|
| December 31, 2013 | (\$69,371)               | (\$5,498) | (\$4,784) | (\$68,657)               | (\$5,690)              |
| December 31, 2015 | \$3,647                  | \$267     | \$252     | \$3,632                  | \$276                  |
| December 31, 2017 | N/A                      | N/A       | N/A       | (\$24,007)               | (\$1,695)              |
| <b>Total</b>      |                          |           |           | <b>(\$89,032)</b>        | <b>(\$7,109)</b>       |

## Tier 1/Tier 2 Valuation Results

### Unfunded Accrued Liability (UAL)

#### **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                                  | \$213,820       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 7,595           |
| c. Benefit payments during 2017  | (2,380)         |
| d. Interest at 7.20% to December 31, 2017  | 15,583          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 234,618         |
| 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.)               | 234,618         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 232,524         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 2,094           |
| 4. Expected actuarial value of assets  |                 |
| a. Actuarial value of assets at December 31, 2016                                    | 278,266         |
| b. Contributions for 2017 <sup>1</sup>   | 2,631           |
| c. Benefit payments and expenses during 2017   | (2,399)         |
| d. Interest at 7.20% to December 31, 2017  | 20,044          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 298,542         |
| 5. Actuarial value of assets at December 31, 2017                                    | 321,556         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 23,014          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$25,108</b> |

#### **Unfunded Accrued Liability Reconciliation**

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

|   |                   |
|---|-------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>(\$64,446)</b> |
| 2. Expected increase  | 522               |
| 3. Liability (gain)/loss  | (2,094)           |
| 4. Asset (gain)/loss  | (23,014)          |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                 |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>(\$89,032)</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017 |   |                        | December 31, 2016 |   |                        |
|------------------------|-------------------|---|------------------------|-------------------|---|------------------------|
|                        | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$0               | \$0   | 0.00%                  | \$0               | \$0   | 0.00%                  |
| Tier 1 General Service | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 Police & Fire   | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 General Service | 8,384             | 58,808  | 14.26%                 | 8,027             | 56,669  | 14.16%                 |
| <b>Total</b>           | <b>\$8,384</b>    | <b>\$58,808</b>                                   | <b>14.26%</b>          | <b>\$8,027</b>    | <b>\$56,669</b>                                   | <b>14.16%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | (\$89,032)        | (\$64,446)        |
| 2. Next year's Tier 1/Tier 2 UAL payment | (7,109)           | (5,141)           |
| 3. Combined valuation payroll            | 179,925           | 149,176           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | (3.95%)           | (3.45%)           |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 14.26%   | 14.16%  |
| b. Tier 1/Tier 2 UAL rate                             | (3.95%)  | (3.45%)   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 10.46%   | 10.85%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 11.03%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 11.03%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 2.21%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%   |
| c. Funded percentage   |                          | 138%    |
| 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.) |                          | 5.40%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 5.63%   |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 16.43%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 10.46%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%   |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | (3.95%) |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | (3.95%) |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 10.46%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 14.26%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 14.26%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 10.46%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates        |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate | 14.26%   | 14.16%  |
| b. Tier 1/Tier 2 UAL rate                          | (3.95%)  | (3.45%)   |
| c. Multnomah Fire District #10 rate                | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate                | 10.46%   | 10.85%  |
| <i>(a. + b. + c., minimum of 5.94%)</i>            |  |   |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$0              | \$0           | \$0              |
| Tier 2                            | 58,808           | 0             | 58,808           |
| Tier 1/Tier 2 valuation payroll   | 58,808           | 0             | 58,808           |
| OPSRP valuation payroll           | 121,117          | 0             | 121,117          |
| <b>Combined valuation payroll</b> | <b>\$179,925</b> | <b>\$0</b>    | <b>\$179,925</b> |

### *Employer Member Census*

|  | December 31 |          |          |          |          |          |          |          |
|--|-------------|----------|----------|----------|----------|----------|----------|----------|
|  | 2017        |          |          |          | 2016     |          |          |          |
|  | Tier 1      | Tier 2   | OPSRP    | Total    | Tier 1   | Tier 2   | OPSRP    | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |          |          |          |          |          |
| General Service  | 0           | 1        | 3        | 4        | 0        | 1        | 2        | 3        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 1        | 3        | 4        | 0        | 1        | 2        | 3        |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Police & Fire  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Total  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| <b>Dormant Members</b>   |             |          |          |          |          |          |          |          |
| General Service  | 1           | 0        | 1        | 2        | 1        | 0        | 1        | 2        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 1           | 0        | 1        | 2        | 1        | 0        | 1        | 2        |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |          |          |          |          |          |
| General Service  | 2           | 0        | 0        | 2        | 2        | 0        | 0        | 2        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 2           | 0        | 0        | 2        | 2        | 0        | 0        | 2        |
| <b>Grand Total Number of Members</b>                                   | <b>3</b>    | <b>1</b> | <b>4</b> | <b>8</b> | <b>3</b> | <b>1</b> | <b>3</b> | <b>7</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             |          |                         |
| 35-39           |          |                                  | 60-64                             |          |                         |
| 40-44           |          |                                  | 65-69                             | 1        | 153                     |
| 45-49           |          |                                  | 70-74                             |          |                         |
| 50-54           |          |                                  | 75-79                             | 1        | 47                      |
| 55-59           |          |                                  | 80-84                             |          |                         |
| 60-64           | 1        | 233                              | 85-89                             |          |                         |
| 65-69           |          |                                  | 90-94                             |          |                         |
| 70-74           |          |                                  | 95-99                             |          |                         |
| 75+             |          |                                  | 100+                              |          |                         |
| <b>Total</b>    | <b>1</b> | <b>233</b>                       | <b>Total</b>                      | <b>2</b> | <b>100</b>              |

## 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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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.



October 2018

North Clackamas County Water Commission/2835  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
North Clackamas County Water Commission/2835

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.



October 2018  
North Clackamas County Water Commission/2835

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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**

**INDEPENDENT EMPLOYERS**

**North Clackamas County Water Commission -- #2835**

**October 2018**

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# Executive Summary

Milliman has prepared this report for North Clackamas County Water Commission to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to North Clackamas County Water Commission.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for North Clackamas County Water Commission***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 15.22%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 3.41%         | 3.41%           | 3.41%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>20.08%</b> | <b>13.26%</b>   | <b>17.89%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>20.14%</b> | <b>13.26%</b>   | <b>17.89%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 66%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 18.63%             | 18.63%                        |
| Minimum 2021-2023 Rate                                       | 14.90%             | 11.17%                        |
| Maximum 2021-2023 Rate                                       | 22.36%             | 26.09%                        |

# 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               | \$324,353                     | \$435,475                             | \$111,122            | 74%                  | \$245,417           | 45%   |
| 12/31/2013               | 390,977                       | 483,852                               | 92,875               | 81%                  | 242,904             | 38%   |
| 12/31/2014               | 434,442                       | 612,972                               | 178,530              | 71%                  | 208,423             | 86%   |
| 12/31/2015               | 458,420                       | 707,381                               | 248,961              | 65%                  | 256,006             | 97%   |
| 12/31/2016               | 503,083                       | 835,502                               | 332,419              | 60%                  | 261,982             | 127%  |
| 12/31/2017               | 598,345                       | 901,605                               | 303,260              | 66%                  | 263,023             | 115%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### ***North Clackamas County Water Commission***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$303,260                 | \$332,419         |
| Allocated pooled OPSRP UAL                       | 39,635                    | 45,103            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 342,895                   | 377,522           |
| Combined valuation payroll                       | 263,023                   | 261,982           |
| Net pension UAL as a percentage of payroll       | 130%                      | 144%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$3,014)                 | (\$36)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$27,825                  | \$26,874          |
| Tier 1/Tier 2 valuation payroll                                  | 182,866                   | 181,302           |
| Tier 1/Tier 2 pension normal cost rate                           | 15.22%                    | 14.82%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$901,605                 | \$835,502         |
| Actuarial asset value  | 598,345                   | 503,083           |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 303,260                   | 332,419           |
| Tier 1/ Tier 2 Funded status                                     | 66%                       | 60%               |
| Combined valuation payroll                                       | \$263,023                 | \$261,982         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 115%                      | 127%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 3.41%                     | 5.61%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 2                         | 2                 |
| Tier 1/Tier 2 dormant members                                    | 1                         | 1                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 0                         | 0                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 263,023           | 261,982           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

## Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$106,963         | \$96,081          |
| 2. Employer reserves                                  | 491,382           | 407,002           |
| 3. Benefits in force reserve                          | 0                 | 0                 |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$598,345</b>  | <b>\$503,083</b>  |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$503,083                                 |
| 2. Regular employer contributions   | 18,873                                    |
| 3. Benefit payments and expenses  | 0   |
| 4. Adjustments <sup>1</sup>   | 129                                       |
| 5. Interest credited  | 76,259                                    |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$598,345</b>                          |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 13,227            | 12,924            |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 14,598            | 13,950            |
| <b>Total</b>           | <b>\$27,825</b>   | <b>\$26,874</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$27,825       | \$27,825      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$0               | \$0               |
| ▪ Tier 1 General Service                 | 505,292           | 471,602           |
| ▪ Tier 2 Police & Fire                   | 0                 | 0                 |
| ▪ Tier 2 General Service                 | 361,717           | 331,361           |
| ▪ <b>Total Active Members</b>            | <b>\$867,009</b>  | <b>\$802,963</b>  |
| Dormant Members                          | 34,596            | 32,539            |
| Retired Members and Beneficiaries        | 0                 | 0                 |
| <b>Total Actuarial Accrued Liability</b> | <b>\$901,605</b>  | <b>\$835,502</b>  |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$901,605      | \$901,605     | \$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  | \$901,605         | \$835,502         |
| 2. Actuarial value of assets  | 598,345           | 503,083           |
| 3. Unfunded accrued liability (1. – 2.)                                       | 303,260           | 332,419           |
| 4. Funded percentage (2. ÷ 1.)  | 66%               | 60%               |
| 5. Combined valuation payroll   | \$263,023         | \$261,982         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 115%              | 127%              |

#### 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<br>December 31, 2016 | Payment  | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|----------|----------|--------------------------|------------------------|
| December 31, 2013 | \$92,259                 | \$7,312  | \$6,362  | \$91,309                 | \$7,567                |
| December 31, 2015 | \$156,119                | \$11,424 | \$10,802 | \$155,497                | \$11,824               |
| December 31, 2017 | N/A                      | N/A      | N/A      | \$56,454                 | \$3,986                |
| <b>Total</b>      |                          |          |          | <b>\$303,260</b>         | <b>\$23,377</b>        |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$835,502       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 25,429          |
| c. Benefit payments during 2017  | 0               |
| d. Interest at 7.20% to December 31, 2017  | 61,072          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 922,003         |
| 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.)               | 922,003         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 901,605         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 20,398          |
| 4. Expected actuarial value of assets  |                 |
| a. Actuarial value of assets at December 31, 2016                                    | 503,083         |
| b. Contributions for 2017 <sup>1</sup>   | 18,873          |
| c. Benefit payments and expenses during 2017   | 0               |
| d. Interest at 7.20% to December 31, 2017  | 36,901          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 558,858         |
| 5. Actuarial value of assets at December 31, 2017                                    | 598,345         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 39,487          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$59,885</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$332,419</b> |
| 2. Expected increase  | 30,726           |
| 3. Liability (gain)/loss  | (20,398)         |
| 4. Asset (gain)/loss  | (39,487)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$303,260</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 13,227            | 83,578                                   | 15.83%           | 12,924            | 84,018                                   | 15.38%           |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 14,598            | 99,288                                   | 14.70%           | 13,950            | 97,284                                   | 14.34%           |
| <b>Total</b>           | <b>\$27,825</b>   | <b>\$182,866</b>                         | <b>15.22%</b>    | <b>\$26,874</b>   | <b>\$181,302</b>                         | <b>14.82%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$303,260         | \$332,419         |
| 2. Next year's Tier 1/Tier 2 UAL payment | 23,377            | 24,670            |
| 3. Combined valuation payroll            | 263,023           | 261,982           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 8.89%             | 9.42%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 15.22%   | 14.82%  |
| b. Tier 1/Tier 2 UAL rate                             | 8.89%  | 9.42%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 24.26%   | 24.38%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 14.43%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 14.43%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 2.89%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%   |
| c. Funded percentage   |                          | 66%     |
| 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.) |                          | 4.20%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 10.23%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 18.63%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 24.26%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (5.63%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 8.89%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 3.26%   |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 18.63%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 15.22%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 15.22%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 18.63%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 15.22%   | 14.82%  |
| b. Tier 1/Tier 2 UAL rate  | 3.26%  | 5.47%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 18.63%   | 20.43%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$83,578         | \$0           | \$83,578         |
| Tier 2                            | 99,288           | 0             | 99,288           |
| Tier 1/Tier 2 valuation payroll   | 182,866          | 0             | 182,866          |
| OPSRP valuation payroll           | 80,157           | 0             | 80,157           |
| <b>Combined valuation payroll</b> | <b>\$263,023</b> | <b>\$0</b>    | <b>\$263,023</b> |

### *Employer Member Census*

|  | December 31 |          |          |          |          |          |          |          |
|--|-------------|----------|----------|----------|----------|----------|----------|----------|
|  | 2017        |          |          |          | 2016     |          |          |          |
|  | Tier 1      | Tier 2   | OPSRP    | Total    | Tier 1   | Tier 2   | OPSRP    | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |          |          |          |          |          |
| General Service  | 1           | 1        | 1        | 3        | 1        | 1        | 1        | 3        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 1           | 1        | 1        | 3        | 1        | 1        | 1        | 3        |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |          |          |          |          |          |
| General Service  | 1           | 1        | N/A      | 2        | 1        | 1        | N/A      | 2        |
| Police & Fire  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Total  | 1           | 1        | N/A      | 2        | 1        | 1        | N/A      | 2        |
| <b>Dormant Members</b>   |             |          |          |          |          |          |          |          |
| General Service  | 1           | 0        | 0        | 1        | 1        | 0        | 0        | 1        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 1           | 0        | 0        | 1        | 1        | 0        | 0        | 1        |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Grand Total Number of Members</b>                                   | <b>3</b>    | <b>2</b> | <b>1</b> | <b>6</b> | <b>3</b> | <b>2</b> | <b>1</b> | <b>6</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          | 1        |          |          |          | 1        |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          | 1        |          |          |          |          | 1        |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             |       |                         |
| 35-39           |          |                                  | 60-64                             |       |                         |
| 40-44           |          |                                  | 65-69                             |       |                         |
| 45-49           |          |                                  | 70-74                             |       |                         |
| 50-54           |          |                                  | 75-79                             |       |                         |
| 55-59           | 1        | 241                              | 80-84                             |       |                         |
| 60-64           |          |                                  | 85-89                             |       |                         |
| 65-69           |          |                                  | 90-94                             |       |                         |
| 70-74           |          |                                  | 95-99                             |       |                         |
| 75+             |          |                                  | 100+                              |       |                         |
| <b>Total</b>    | <b>1</b> | <b>241</b>                       | <b>Total</b>                      |       |                         |

## 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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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.



October 2018

Northeast Oregon Housing Authority/2637  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
Northeast Oregon Housing Authority/2637

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.



October 2018  
Northeast Oregon Housing Authority/2637

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**

**INDEPENDENT EMPLOYERS**

**Northeast Oregon Housing Authority -- #2637**

**October 2018**

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## Executive Summary

Milliman has prepared this report for Northeast Oregon Housing Authority to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Northeast Oregon Housing Authority.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Northeast Oregon Housing Authority***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 18.21%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | (2.64%)       | (2.64%)         | (2.64%)       |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>17.02%</b> | <b>7.21%</b>    | <b>11.84%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>17.08%</b> | <b>7.21%</b>    | <b>11.84%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 75%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 15.57%             | 15.57%                        |
| Minimum 2021-2023 Rate                                       | 12.46%             | 9.35%                         |
| Maximum 2021-2023 Rate                                       | 18.68%             | 21.79%                        |

# 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               | \$3,107,972                   | \$3,364,806                           | \$256,834            | 92%                  | \$703,856           | 36%   |
| 12/31/2013               | 3,340,344                     | 3,620,147                             | 279,803              | 92%                  | 727,538             | 38%   |
| 12/31/2014               | 3,341,768                     | 4,103,295                             | 761,527              | 81%                  | 755,052             | 101%  |
| 12/31/2015               | 3,184,383                     | 4,221,502                             | 1,037,119            | 75%                  | 808,227             | 128%  |
| 12/31/2016               | 3,124,730                     | 4,489,318                             | 1,364,588            | 70%                  | 774,143             | 176%  |
| 12/31/2017               | 3,384,428                     | 4,509,960                             | 1,125,532            | 75%                  | 814,583             | 138%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Northeast Oregon Housing Authority***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$1,125,532               | \$1,364,588       |
| Allocated pooled OPSRP UAL                       | 122,750                   | 133,278           |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 1,248,282                 | 1,497,866         |
| Combined valuation payroll                       | 814,583                   | 774,143           |
| Net pension UAL as a percentage of payroll       | 153%                      | 193%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$9,334)                 | (\$105)           |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$40,574                  | \$38,530          |
| Tier 1/Tier 2 valuation payroll                                  | 222,818                   | 214,460           |
| Tier 1/Tier 2 pension normal cost rate                           | 18.21%                    | 17.97%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$4,509,960               | \$4,489,318       |
| Actuarial asset value  | 3,384,428                 | 3,124,730         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 1,125,532                 | 1,364,588         |
| Tier 1/ Tier 2 Funded status                                     | 75%                       | 70%               |
| Combined valuation payroll                                       | \$814,583                 | \$774,143         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 138%                      | 176%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | (2.64%)                   | (2.40%)           |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 3                         | 3                 |
| Tier 1/Tier 2 dormant members                                    | 5                         | 6                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 9                         | 10                |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 814,583           | 774,143           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$495,452          | \$454,150          |
| 2. Employer reserves                                  | 1,676,884          | 1,461,687          |
| 3. Benefits in force reserve                          | 1,212,092          | 1,208,893          |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$3,384,428</b> | <b>\$3,124,730</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$3,124,730                               |
| 2. Regular employer contributions   | (8,194)                                   |
| 3. Benefit payments and expenses  | (225,783)                                 |
| 4. Adjustments <sup>1</sup>   | 71,747                                    |
| 5. Interest credited  | 421,928                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$3,384,428</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 18,987            | 18,145            |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 21,587            | 20,385            |
| <b>Total</b>           | <b>\$40,574</b>   | <b>\$38,530</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$40,574       | \$40,574      | \$0        |



## Tier 1/Tier 2 Valuation Results

### Liabilities

#### ***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.

#### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017  | December 31, 2016  |
|--|--------------------|--------------------|
| Active Members                           |                    |                    |
| ▪ Tier 1 Police & Fire                   | \$0                | \$0                |
| ▪ Tier 1 General Service                 | 599,021            | 550,366            |
| ▪ Tier 2 Police & Fire                   | 0                  | 0                  |
| ▪ Tier 2 General Service                 | 460,958            | 415,800            |
| ▪ <b>Total Active Members</b>            | <b>\$1,059,979</b> | <b>\$966,166</b>   |
| Dormant Members                          | 704,478            | 668,170            |
| Retired Members and Beneficiaries        | 2,745,503          | 2,854,982          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$4,509,960</b> | <b>\$4,489,318</b> |

#### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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 | \$4,509,960    | \$4,509,960   | \$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  | \$4,509,960       | \$4,489,318       |
| 2. Actuarial value of assets  | 3,384,428         | 3,124,730         |
| 3. Unfunded accrued liability (1. – 2.)                                       | 1,125,532         | 1,364,588         |
| 4. Funded percentage (2. ÷ 1.)  | 75%               | 70%               |
| 5. Combined valuation payroll   | \$814,583         | \$774,143         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 138%              | 176%              |

#### 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<br>December 31, 2016 | Payment  | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|----------|----------|--------------------------|------------------------|
| December 31, 2013 | \$277,949                | \$22,028 | \$19,167 | \$275,088                | \$22,799               |
| December 31, 2015 | \$757,343                | \$55,418 | \$52,402 | \$754,327                | \$57,359               |
| December 31, 2017 | N/A                      | N/A      | N/A      | \$96,117                 | \$6,786                |
| <b>Total</b>      |                          |          |          | <b>\$1,125,532</b>       | <b>\$86,944</b>        |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$4,489,318      |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 36,458           |
| c. Benefit payments during 2017  | (224,042)        |
| d. Interest at 7.20% to December 31, 2017  | 316,478          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 4,618,212        |
| 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.)               | 4,618,212        |
| 2. Actuarial accrued liability at December 31, 2017                                  | 4,509,960        |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 108,252          |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 3,124,730        |
| b. Contributions for 2017 <sup>1</sup>   | (8,194)          |
| c. Benefit payments and expenses during 2017   | (225,783)        |
| d. Interest at 7.20% to December 31, 2017  | 216,557          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 3,107,311        |
| 5. Actuarial value of assets at December 31, 2017                                    | 3,384,428        |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 277,117          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$385,369</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                    |
|---|--------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$1,364,588</b> |
| 2. Expected increase  | 146,313            |
| 3. Liability (gain)/loss  | (108,252)          |
| 4. Asset (gain)/loss  | (277,117)          |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                  |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$1,125,532</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017 |   |                        | December 31, 2016 |   |                        |
|------------------------|-------------------|---|------------------------|-------------------|---|------------------------|
|                        | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$0               | \$0   | 0.00%                  | \$0               | \$0   | 0.00%                  |
| Tier 1 General Service | 18,987            | 76,502  | 24.82%                 | 18,145            | 75,305  | 24.10%                 |
| Tier 2 Police & Fire   | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 General Service | 21,587            | 146,316   | 14.75%                 | 20,385            | 139,155   | 14.65%                 |
| <b>Total</b>           | <b>\$40,574</b>   | <b>\$222,818</b>                                  | <b>18.21%</b>          | <b>\$38,530</b>   | <b>\$214,460</b>                                  | <b>17.97%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$1,125,532       | \$1,364,588       |
| 2. Next year's Tier 1/Tier 2 UAL payment | 86,944            | 100,696           |
| 3. Combined valuation payroll            | 814,583           | 774,143           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 10.67%            | 13.01%            |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 18.21%   | 17.97%  |
| b. Tier 1/Tier 2 UAL rate                             | 10.67%   | 13.01%  |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 29.03%   | 31.12%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |          |
|--|--------------------------|----------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 12.57%   |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%    |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 12.57%   |
| 4. Size of rate collar   |                          |          |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 2.51%    |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%    |
| c. Funded percentage   |                          | 75%      |
| 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.) |                          | 3.00%    |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 9.57%    |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 15.57%   |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 29.03%   |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (13.46%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 10.67%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | (2.79%)  |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 15.57%   |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%    |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%    |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 18.21%   |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 18.21%   |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 15.57%   |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates        |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate | 18.21%   | 17.97%  |
| b. Tier 1/Tier 2 UAL rate                          | (2.79%)  | (2.54%)   |
| c. Multnomah Fire District #10 rate                | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate                | 15.57%   | 15.57%  |
| <i>(a. + b. + c., minimum of 5.94%)</i>            |  |   |



# Data

## Demographic Information

### Employer Valuation Payroll

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$76,502         | \$0           | \$76,502         |
| Tier 2                            | 146,316          | 0             | 146,316          |
| Tier 1/Tier 2 valuation payroll   | 222,818          | 0             | 222,818          |
| OPSRP valuation payroll           | 591,765          | 0             | 591,765          |
| <b>Combined valuation payroll</b> | <b>\$814,583</b> | <b>\$0</b>    | <b>\$814,583</b> |

### Employer Member Census

|  | December 31 |          |           |           |           |          |           |           |
|--|-------------|----------|-----------|-----------|-----------|----------|-----------|-----------|
|  | 2017        |          |           |           | 2016      |          |           |           |
|  | Tier 1      | Tier 2   | OPSRP     | Total     | Tier 1    | Tier 2   | OPSRP     | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |          |           |           |           |          |           |           |
| General Service  | 1           | 2        | 17        | 20        | 1         | 2        | 15        | 18        |
| Police & Fire  | 0           | 0        | 0         | 0         | 0         | 0        | 0         | 0         |
| Total  | 1           | 2        | 17        | 20        | 1         | 2        | 15        | 18        |
| <b>Active Members with previous service segments with the employer</b> |             |          |           |           |           |          |           |           |
| General Service  | 0           | 0        | N/A       | 0         | 0         | 0        | N/A       | 0         |
| Police & Fire  | 0           | 0        | N/A       | 0         | 0         | 0        | N/A       | 0         |
| Total  | 0           | 0        | N/A       | 0         | 0         | 0        | N/A       | 0         |
| <b>Dormant Members</b>   |             |          |           |           |           |          |           |           |
| General Service  | 4           | 1        | 1         | 6         | 5         | 1        | 1         | 7         |
| Police & Fire  | 0           | 0        | 0         | 0         | 0         | 0        | 0         | 0         |
| Total  | 4           | 1        | 1         | 6         | 5         | 1        | 1         | 7         |
| <b>Retired Members and Beneficiaries</b>                               |             |          |           |           |           |          |           |           |
| General Service  | 8           | 1        | 0         | 9         | 9         | 1        | 0         | 10        |
| Police & Fire  | 0           | 0        | 0         | 0         | 0         | 0        | 0         | 0         |
| Total  | 8           | 1        | 0         | 9         | 9         | 1        | 0         | 10        |
| <b>Grand Total Number of Members</b>                                   | <b>13</b>   | <b>4</b> | <b>18</b> | <b>35</b> | <b>15</b> | <b>4</b> | <b>16</b> | <b>35</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          | 1        |          | 1        |          | 1        |          |          | 3        |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>1</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>3</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             |          |                         |
| 35-39           |          |                                  | 60-64                             | 1        | 1,222                   |
| 40-44           |          |                                  | 65-69                             | 6        | 2,113                   |
| 45-49           | 1        | 1,720                            | 70-74                             | 2        | 2,058                   |
| 50-54           |          |                                  | 75-79                             |          |                         |
| 55-59           | 3        | 766                              | 80-84                             |          |                         |
| 60-64           |          |                                  | 85-89                             |          |                         |
| 65-69           | 1        | 1,432                            | 90-94                             |          |                         |
| 70-74           |          |                                  | 95-99                             |          |                         |
| 75+             |          |                                  | 100+                              |          |                         |
| <b>Total</b>    | <b>5</b> | <b>1,090</b>                     | <b>Total</b>                      | <b>9</b> | <b>2,002</b>            |

## 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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October 2018

Nyssa Road Assessment District #2/2550  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
Nyssa Road Assessment District #2/2550

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.



October 2018  
Nyssa Road Assessment District #2/2550

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**

**INDEPENDENT EMPLOYERS**

**Nyssa Road Assessment District #2 -- #2550**

**October 2018**

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# Executive Summary

Milliman has prepared this report for Nyssa Road Assessment District #2 to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Nyssa Road Assessment District #2.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Nyssa Road Assessment District #2***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 19.25%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 8.57%         | 8.57%           | 8.57%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>29.27%</b> | <b>18.42%</b>   | <b>23.05%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>29.33%</b> | <b>18.42%</b>   | <b>23.05%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 88%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 27.82%             | 27.82%                        |
| Minimum 2021-2023 Rate                                       | 22.26%             | 16.70%                        |
| Maximum 2021-2023 Rate                                       | 33.38%             | 38.94%                        |

# 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               | \$1,092,540                   | \$1,592,557                           | \$500,017            | 69%                  | \$171,200           | 292%  |
| 12/31/2013               | 1,250,536                     | 1,638,254                             | 387,718              | 76%                  | 175,770             | 221%  |
| 12/31/2014               | 1,328,253                     | 1,887,894                             | 559,641              | 70%                  | 193,031             | 290%  |
| 12/31/2015               | 1,270,584                     | 1,698,042                             | 427,458              | 75%                  | 216,210             | 198%  |
| 12/31/2016               | 1,354,694                     | 1,783,660                             | 428,966              | 76%                  | 226,437             | 189%  |
| 12/31/2017               | 1,454,621                     | 1,651,511                             | 196,890              | 88%                  | 235,240             | 84%   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Nyssa Road Assessment District #2***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$196,890                 | \$428,966         |
| Allocated pooled OPSRP UAL                       | 35,449                    | 38,984            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 232,339                   | 467,950           |
| Combined valuation payroll                       | 235,241                   | 226,437           |
| Net pension UAL as a percentage of payroll       | 99%                       | 207%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$2,695)                 | (\$31)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$28,189                  | \$26,500          |
| Tier 1/Tier 2 valuation payroll                                  | 146,404                   | 141,788           |
| Tier 1/Tier 2 pension normal cost rate                           | 19.25%                    | 18.69%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$1,651,511               | \$1,783,660       |
| Actuarial asset value  | 1,454,621                 | 1,354,694         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 196,890                   | 428,966           |
| Tier 1/ Tier 2 Funded status                                     | 88%                       | 76%               |
| Combined valuation payroll                                       | \$235,241                 | \$226,437         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 84%                       | 189%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 8.57%                     | 15.03%            |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 3                         | 3                 |
| Tier 1/Tier 2 dormant members                                    | 2                         | 1                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 4                         | 5                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 235,241           | 226,437           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$344,650          | \$319,096          |
| 2. Employer reserves                                  | 794,137            | 626,642            |
| 3. Benefits in force reserve                          | 315,834            | 408,955            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$1,454,621</b> | <b>\$1,354,694</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$1,354,694                               |
| 2. Regular employer contributions   | 61,353                                    |
| 3. Benefit payments and expenses  | (58,832)                                  |
| 4. Adjustments <sup>1</sup>   | (74,087)                                  |
| 5. Interest credited  | 171,493                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$1,454,621</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 20,049            | 18,779            |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 8,140             | 7,721             |
| <b>Total</b>           | <b>\$28,189</b>   | <b>\$26,500</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$28,189       | \$28,189      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017  | December 31, 2016  |
|--|--------------------|--------------------|
| Active Members                           |                    |                    |
| ▪ Tier 1 Police & Fire                   | \$0                | \$0                |
| ▪ Tier 1 General Service                 | 570,191            | 607,178            |
| ▪ Tier 2 Police & Fire                   | 0                  | 0                  |
| ▪ Tier 2 General Service                 | 82,999             | 72,199             |
| ▪ <b>Total Active Members</b>            | <b>\$653,190</b>   | <b>\$679,377</b>   |
| Dormant Members                          | 282,928            | 138,473            |
| Retired Members and Beneficiaries        | 715,393            | 965,810            |
| <b>Total Actuarial Accrued Liability</b> | <b>\$1,651,511</b> | <b>\$1,783,660</b> |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$1,651,511    | \$1,651,511   | \$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   | \$1,651,511       | \$1,783,660       |
| 2. Actuarial value of assets   | 1,454,621         | 1,354,694         |
| 3. Unfunded accrued liability (1. – 2.)                                    | 196,890           | 428,966           |
| 4. Funded percentage (2. ÷ 1.)   | 88%               | 76%               |
| 5. Combined valuation payroll  | \$235,241         | \$226,437         |
| 6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.) | 84%               | 189%              |

### 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<br>December 31, 2016 | Payment  | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|----------|----------|--------------------------|------------------------|
| December 31, 2013 | \$385,148                | \$30,524 | \$26,559 | \$381,183                | \$31,591               |
| December 31, 2015 | \$40,029                 | \$2,929  | \$2,770  | \$39,870                 | \$3,032                |
| December 31, 2017 | N/A                      | N/A      | N/A      | (\$224,163)              | (\$15,827)             |
| <b>Total</b>      |                          |          |          | <b>\$196,890</b>         | <b>\$18,796</b>        |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$1,783,660      |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 25,066           |
| c. Benefit payments during 2017  | (58,378)         |
| d. Interest at 7.20% to December 31, 2017  | 127,224          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 1,877,572        |
| 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.)               | 1,877,572        |
| 2. Actuarial accrued liability at December 31, 2017                                  | 1,651,511        |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 226,061          |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 1,354,694        |
| b. Contributions for 2017 <sup>1</sup>   | 61,353           |
| c. Benefit payments and expenses during 2017   | (58,832)         |
| d. Interest at 7.20% to December 31, 2017  | 97,629           |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 1,454,843        |
| 5. Actuarial value of assets at December 31, 2017                                    | 1,454,621        |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | (223)            |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$225,838</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$428,966</b> |
| 2. Expected increase  | (6,238)          |
| 3. Liability (gain)/loss  | (226,061)        |
| 4. Asset (gain)/loss  | 223              |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$196,890</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 20,049            | 85,801                                   | 23.37%           | 18,779            | 82,899                                   | 22.65%           |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 8,140             | 60,603                                   | 13.43%           | 7,721             | 58,889                                   | 13.11%           |
| <b>Total</b>           | <b>\$28,189</b>   | <b>\$146,404</b>                         | <b>19.25%</b>    | <b>\$26,500</b>   | <b>\$141,788</b>                         | <b>18.69%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$196,890         | \$428,966         |
| 2. Next year's Tier 1/Tier 2 UAL payment | 18,796            | 33,721            |
| 3. Combined valuation payroll            | 235,241           | 226,437           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 7.99%             | 14.89%            |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 19.25%   | 18.69%  |
| b. Tier 1/Tier 2 UAL rate                             | 7.99%  | 14.89%  |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 27.39%   | 33.72%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |        |
|--|--------------------------|--------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 34.78% |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%  |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 34.78% |
| 4. Size of rate collar   |                          |        |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 6.96%  |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 6.96%  |
| c. Funded percentage   |                          | 88%    |
| 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.) |                          | 6.96%  |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 27.82% |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 41.74% |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 27.39% |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.43%  |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 7.99%  |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 8.42%  |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 27.82% |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%  |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%  |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 19.25% |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 19.25% |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 27.82% |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 19.25%   | 18.69%  |
| b. Tier 1/Tier 2 UAL rate  | 8.42%  | 14.89%  |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 27.82%   | 33.72%  |



# Data

## Demographic Information

### Employer Valuation Payroll

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$85,801         | \$0           | \$85,801         |
| Tier 2                            | 60,603           | 0             | 60,603           |
| Tier 1/Tier 2 valuation payroll   | 146,404          | 0             | 146,404          |
| OPSRP valuation payroll           | 88,837           | 0             | 88,837           |
| <b>Combined valuation payroll</b> | <b>\$235,241</b> | <b>\$0</b>    | <b>\$235,241</b> |

### Employer Member Census

|  | December 31 |          |          |           |          |          |          |           |
|--|-------------|----------|----------|-----------|----------|----------|----------|-----------|
|  | 2017        |          |          |           | 2016     |          |          |           |
|  | Tier 1      | Tier 2   | OPSRP    | Total     | Tier 1   | Tier 2   | OPSRP    | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |           |          |          |          |           |
| General Service  | 2           | 1        | 2        | 5         | 2        | 1        | 2        | 5         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Total  | 2           | 1        | 2        | 5         | 2        | 1        | 2        | 5         |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |           |          |          |          |           |
| General Service  | 0           | 0        | N/A      | 0         | 1        | 0        | N/A      | 1         |
| Police & Fire  | 0           | 0        | N/A      | 0         | 0        | 0        | N/A      | 0         |
| Total  | 0           | 0        | N/A      | 0         | 1        | 0        | N/A      | 1         |
| <b>Dormant Members</b>   |             |          |          |           |          |          |          |           |
| General Service  | 2           | 0        | 1        | 3         | 1        | 0        | 1        | 2         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Total  | 2           | 0        | 1        | 3         | 1        | 0        | 1        | 2         |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |           |          |          |          |           |
| General Service  | 4           | 0        | 0        | 4         | 5        | 0        | 0        | 5         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Total  | 4           | 0        | 0        | 4         | 5        | 0        | 0        | 5         |
| <b>Grand Total Number of Members</b>                                   | <b>8</b>    | <b>1</b> | <b>3</b> | <b>12</b> | <b>9</b> | <b>1</b> | <b>3</b> | <b>13</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          | 2        |          |          |          | 2        |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>3</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             |          |                         |
| 35-39           |          |                                  | 60-64                             | 1        | 52                      |
| 40-44           |          |                                  | 65-69                             |          |                         |
| 45-49           |          |                                  | 70-74                             |          |                         |
| 50-54           |          |                                  | 75-79                             | 1        | 201                     |
| 55-59           | 1        | 789                              | 80-84                             |          |                         |
| 60-64           | 1        | 922                              | 85-89                             | 1        | 6,805                   |
| 65-69           |          |                                  | 90-94                             | 1        | 178                     |
| 70-74           |          |                                  | 95-99                             |          |                         |
| 75+             |          |                                  | 100+                              |          |                         |
| <b>Total</b>    | <b>2</b> | <b>856</b>                       | <b>Total</b>                      | <b>4</b> | <b>1,809</b>            |

# 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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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.



October 2018

Oregon Community College Association/2685  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Oregon Community College Association/2685

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.



October 2018  
Oregon Community College Association/2685

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**

**INDEPENDENT EMPLOYERS**

Oregon Community College Association -- #2685

October 2018

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## Executive Summary

Milliman has prepared this report for Oregon Community College Association to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Oregon Community College Association.

### Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

#### ***Employer Rates Effective July 1, 2019 for Oregon Community College Association***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 12.40%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | (1.24%)       | (1.24%)         | (1.24%)       |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>12.61%</b> | <b>8.61%</b>    | <b>13.24%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>12.67%</b> | <b>8.61%</b>    | <b>13.24%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 103%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 11.16%             | 11.16%                        |
| Minimum 2021-2023 Rate                                       | 8.16%              | 5.16%                         |
| Maximum 2021-2023 Rate                                       | 14.16%             | 17.16%                        |

# 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               | \$1,581,197                   | \$1,310,878                           | (\$270,319)          | 121%                 | \$379,961           | (71%)   |
| 12/31/2013               | 1,769,162                     | 1,361,219                             | (407,943)            | 130%                 | 373,823             | (109%)  |
| 12/31/2014               | 1,843,244                     | 1,631,176                             | (212,068)            | 113%                 | 622,484             | (34%)   |
| 12/31/2015               | 1,832,813                     | 1,754,979                             | (77,834)             | 104%                 | 578,412             | (13%)   |
| 12/31/2016               | 1,823,893                     | 1,923,445                             | 99,552               | 95%                  | 558,209             | 18%   |
| 12/31/2017               | 2,049,314                     | 1,984,630                             | (64,684)             | 103%                 | 552,695             | (12%)   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### ***Oregon Community College Association***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | (\$64,684)                | \$99,552          |
| Allocated pooled OPSRP UAL                       | 83,286                    | 96,102            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 18,602                    | 195,654           |
| Combined valuation payroll                       | 552,695                   | 558,209           |
| Net pension UAL as a percentage of payroll       | 3%                        | 35%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$6,333)                 | (\$76)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$27,070                  | \$26,671          |
| Tier 1/Tier 2 valuation payroll                                  | 218,351                   | 227,476           |
| Tier 1/Tier 2 pension normal cost rate                           | 12.40%                    | 11.72%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$1,984,630               | \$1,923,445       |
| Actuarial asset value  | 2,049,314                 | 1,823,893         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | (64,684)                  | 99,552            |
| Tier 1/ Tier 2 Funded status                                     | 103%                      | 95%               |
| Combined valuation payroll                                       | \$552,695                 | \$558,209         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | (12%)                     | 18%               |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | (1.24%)                   | (0.25%)           |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 2                         | 2                 |
| Tier 1/Tier 2 dormant members                                    | 0                         | 0                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 7                         | 7                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 552,695           | 558,209           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

## Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$248,733          | \$218,430          |
| 2. Employer reserves                                  | 1,388,327          | 1,208,537          |
| 3. Benefits in force reserve                          | 412,254            | 396,926            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$2,049,314</b> | <b>\$1,823,893</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$1,823,893                               |
| 2. Regular employer contributions   | (5,351)                                   |
| 3. Benefit payments and expenses  | (76,793)                                  |
| 4. Adjustments <sup>1</sup>   | 38,562                                    |
| 5. Interest credited  | 269,002                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$2,049,314</b>                        |

<sup>1</sup> 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.

## Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 27,070            | 26,671            |
| <b>Total</b>           | <b>\$27,070</b>   | <b>\$26,671</b>   |

#### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$27,070       | \$27,070      | \$0        |



## Tier 1/Tier 2 Valuation Results

### Liabilities

#### ***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.

#### ***Summary of Actuarial Accrued Liability by Tier/Member Classification***

|  | December 31, 2017  | December 31, 2016  |
|--|--------------------|--------------------|
| Active Members                           |                    |                    |
| ▪ Tier 1 Police & Fire                   | \$0                | \$0                |
| ▪ Tier 1 General Service                 | 170,692            | 160,429            |
| ▪ Tier 2 Police & Fire                   | 0                  | 0                  |
| ▪ Tier 2 General Service                 | 880,145            | 825,616            |
| ▪ <b>Total Active Members</b>            | <b>\$1,050,837</b> | <b>\$986,045</b>   |
| Dormant Members                          | 0                  | 0                  |
| Retired Members and Beneficiaries        | 933,793            | 937,400            |
| <b>Total Actuarial Accrued Liability</b> | <b>\$1,984,630</b> | <b>\$1,923,445</b> |

#### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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

|                             | Before<br>Changes | After<br>Changes | Net<br>Change |
|-----------------------------|-------------------|------------------|---------------|
| Actuarial Accrued Liability | \$1,984,630       | \$1,984,630      | \$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  | \$1,984,630       | \$1,923,445       |
| 2. Actuarial value of assets  | 2,049,314         | 1,823,893         |
| 3. Unfunded accrued liability (1. – 2.)                                       | (64,684)          | 99,552            |
| 4. Funded percentage (2. ÷ 1.)  | 103%              | 95%               |
| 5. Combined valuation payroll   | \$552,695         | \$558,209         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | (12%)             | 18%               |

#### 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<br>December 31, 2016 | Payment    | Interest   | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|------------|------------|--------------------------|------------------------|
| December 31, 2013 | (\$405,239)              | (\$32,116) | (\$27,945) | (\$401,068)              | (\$33,240)             |
| December 31, 2015 | \$329,711                | \$24,126   | \$22,813   | \$328,398                | \$24,971               |
| December 31, 2017 | N/A                      | N/A        | N/A        | \$7,986                  | \$564                  |
| <b>Total</b>      |                          |            |            | <b>(\$64,684)</b>        | <b>(\$7,705)</b>       |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$1,923,445      |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 25,237           |
| c. Benefit payments during 2017  | (76,200)         |
| d. Interest at 7.20% to December 31, 2017  | 136,653          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 2,009,135        |
| 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.)               | 2,009,135        |
| 2. Actuarial accrued liability at December 31, 2017                                  | 1,984,630        |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 24,505           |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 1,823,893        |
| b. Contributions for 2017 <sup>1</sup>   | (5,351)          |
| c. Benefit payments and expenses during 2017   | (76,793)         |
| d. Interest at 7.20% to December 31, 2017  | 128,363          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 1,870,113        |
| 5. Actuarial value of assets at December 31, 2017                                    | 2,049,314        |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 179,201          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$203,706</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                   |
|---|-------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$99,552</b>   |
| 2. Expected increase  | 39,470            |
| 3. Liability (gain)/loss  | (24,505)          |
| 4. Asset (gain)/loss  | (179,201)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                 |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>(\$64,684)</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017 |   |                        | December 31, 2016 |   |                        |
|------------------------|-------------------|---|------------------------|-------------------|---|------------------------|
|                        | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$0               | \$0   | 0.00%                  | \$0               | \$0   | 0.00%                  |
| Tier 1 General Service | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 Police & Fire   | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 General Service | 27,070            | 218,351   | 12.40%                 | 26,671            | 227,476   | 11.72%                 |
| <b>Total</b>           | <b>\$27,070</b>   | <b>\$218,351</b>                                  | <b>12.40%</b>          | <b>\$26,671</b>   | <b>\$227,476</b>                                  | <b>11.72%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | (\$64,684)        | \$99,552          |
| 2. Next year's Tier 1/Tier 2 UAL payment | (7,705)           | 4,372             |
| 3. Combined valuation payroll            | 552,695           | 558,209           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | (1.39%)           | 0.78%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 12.40%   | 11.72%  |
| b. Tier 1/Tier 2 UAL rate                             | (1.39%)  | 0.78%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 11.16%   | 12.64%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 8.47%   |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 8.47%   |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 1.69%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%   |
| c. Funded percentage   |                          | 103%    |
| 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.) |                          | 3.00%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 5.47%   |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 11.47%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 11.16%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%   |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | (1.39%) |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | (1.39%) |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 11.16%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 12.40%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 12.40%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 11.16%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 12.40%   | 11.72%  |
| b. Tier 1/Tier 2 UAL rate  | (1.39%)  | (0.39%)   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 11.16%   | 11.47%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$0              | \$0           | \$0              |
| Tier 2                            | 218,351          | 0             | 218,351          |
| Tier 1/Tier 2 valuation payroll   | 218,351          | 0             | 218,351          |
| OPSRP valuation payroll           | 334,344          | 0             | 334,344          |
| <b>Combined valuation payroll</b> | <b>\$552,695</b> | <b>\$0</b>    | <b>\$552,695</b> |

### *Employer Member Census*

|  | December 31 |          |          |           |           |          |          |           |
|--|-------------|----------|----------|-----------|-----------|----------|----------|-----------|
|  | 2017        |          |          |           | 2016      |          |          |           |
|  | Tier 1      | Tier 2   | OPSRP    | Total     | Tier 1    | Tier 2   | OPSRP    | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |           |           |          |          |           |
| General Service  | 0           | 2        | 4        | 6         | 0         | 2        | 4        | 6         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0         | 0        | 0        | 0         |
| Total  | 0           | 2        | 4        | 6         | 0         | 2        | 4        | 6         |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |           |           |          |          |           |
| General Service  | 3           | 4        | N/A      | 7         | 3         | 4        | N/A      | 7         |
| Police & Fire  | 0           | 0        | N/A      | 0         | 0         | 0        | N/A      | 0         |
| Total  | 3           | 4        | N/A      | 7         | 3         | 4        | N/A      | 7         |
| <b>Dormant Members</b>   |             |          |          |           |           |          |          |           |
| General Service  | 0           | 0        | 0        | 0         | 0         | 0        | 0        | 0         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0         | 0        | 0        | 0         |
| Total  | 0           | 0        | 0        | 0         | 0         | 0        | 0        | 0         |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |           |           |          |          |           |
| General Service  | 7           | 0        | 1        | 8         | 7         | 0        | 1        | 8         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0         | 0        | 0        | 0         |
| Total  | 7           | 0        | 1        | 8         | 7         | 0        | 1        | 8         |
| <b>Grand Total Number of Members</b>                                   | <b>10</b>   | <b>6</b> | <b>5</b> | <b>21</b> | <b>10</b> | <b>6</b> | <b>5</b> | <b>21</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          | 1        | 1        |          |          |          |          | 2        |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             |          |                         |
| 35-39           |       |                                  | 60-64                             | 3        | 721                     |
| 40-44           |       |                                  | 65-69                             | 1        | 2,030                   |
| 45-49           |       |                                  | 70-74                             | 1        | 612                     |
| 50-54           |       |                                  | 75-79                             | 1        | 1,098                   |
| 55-59           |       |                                  | 80-84                             |          |                         |
| 60-64           |       |                                  | 85-89                             | 1        | 571                     |
| 65-69           |       |                                  | 90-94                             |          |                         |
| 70-74           |       |                                  | 95-99                             |          |                         |
| 75+             |       |                                  | 100+                              |          |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      | <b>7</b> | <b>925</b>              |

# 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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October 2018

Oregon Municipal Electric Utilities Association/2876  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Oregon Municipal Electric Utilities Association/2876

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.



October 2018  
Oregon Municipal Electric Utilities Association/2876

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**

**INDEPENDENT EMPLOYERS**

**Oregon Municipal Electric Utilities Association -- #2876**

**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 Oregon Municipal Electric Utilities Association to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Oregon Municipal Electric Utilities Association.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Oregon Municipal Electric Utilities Association***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 16.92%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | (3.71%)       | (3.71%)         | (3.71%)       |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>14.66%</b> | <b>6.14%</b>    | <b>10.77%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>14.72%</b> | <b>6.14%</b>    | <b>10.77%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 114%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 13.21%             | 13.21%                        |
| Minimum 2021-2023 Rate                                       | 10.21%             | 7.21%                         |
| Maximum 2021-2023 Rate                                       | 16.21%             | 19.21%                        |

# 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               | \$5,029                       | \$4,809                               | (\$220)              | 105%                 | \$92,028            | 0%  |
| 12/31/2013               | 18,644                        | 14,353                                | (4,291)              | 130%                 | 99,464              | (4%)  |
| 12/31/2014               | 35,378                        | 28,880                                | (6,498)              | 123%                 | 97,533              | (7%)  |
| 12/31/2015               | 48,729                        | 42,142                                | (6,587)              | 116%                 | 99,935              | (7%)  |
| 12/31/2016               | 63,057                        | 70,436                                | 7,379                | 90%                  | 109,019             | 7%  |
| 12/31/2017               | 74,767                        | 65,831                                | (8,936)              | 114%                 | 18,017              | (50%)   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### ***Oregon Municipal Electric Utilities Association***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | (\$8,936)                 | \$7,379           |
| Allocated pooled OPSRP UAL                       | 2,715                     | 18,769            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | (6,221)                   | 26,148            |
| Combined valuation payroll                       | 18,017                    | 109,019           |
| Net pension UAL as a percentage of payroll       | (35%)                     | 24%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$206)                   | (\$15)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$0                       | \$13,228          |
| Tier 1/Tier 2 valuation payroll                                  | 0                         | 109,019           |
| Tier 1/Tier 2 pension normal cost rate                           | 16.92%                    | 12.13%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$65,831                  | \$70,436          |
| Actuarial asset value  | 74,767                    | 63,057            |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | (8,936)                   | 7,379             |
| Tier 1/ Tier 2 Funded status                                     | 114%                      | 90%               |
| Combined valuation payroll                                       | \$18,017                  | \$109,019         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | (50%)                     | 7%                |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | (3.71%)                   | 0.58%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 0                         | 1                 |
| Tier 1/Tier 2 dormant members                                    | 1                         | 0                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 0                         | 0                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 18,017            | 109,019           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$0               | \$0               |
| 2. Employer reserves                                  | 74,767            | 63,057            |
| 3. Benefits in force reserve                          | 0                 | 0                 |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$74,767</b>   | <b>\$63,057</b>   |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$63,057                                  |
| 2. Regular employer contributions   | 1,706                                     |
| 3. Benefit payments and expenses  | 0   |
| 4. Adjustments <sup>1</sup>   | (41)                                      |
| 5. Interest credited  | 10,045                                    |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$74,767</b>                           |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 0                 | 13,228            |
| <b>Total</b>           | <b>\$0</b>        | <b>\$13,228</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$0            | \$0           | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$0               | \$0               |
| ▪ Tier 1 General Service                 | 0                 | 0                 |
| ▪ Tier 2 Police & Fire                   | 0                 | 0                 |
| ▪ Tier 2 General Service                 | 0                 | 70,436            |
| ▪ <b>Total Active Members</b>            | <b>\$0</b>        | <b>\$70,436</b>   |
| Dormant Members                          | 65,831            | 0                 |
| Retired Members and Beneficiaries        | 0                 | 0                 |
| <b>Total Actuarial Accrued Liability</b> | <b>\$65,831</b>   | <b>\$70,436</b>   |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$65,831       | \$65,831      | \$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  | \$65,831          | \$70,436          |
| 2. Actuarial value of assets  | 74,767            | 63,057            |
| 3. Unfunded accrued liability (1. – 2.)                                       | (8,936)           | 7,379             |
| 4. Funded percentage (2. ÷ 1.)  | 114%              | 90%               |
| 5. Combined valuation payroll   | \$18,017          | \$109,019         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | (50%)             | 7%                |

### 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<br>December 31, 2016 | Payment | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|---------|----------|--------------------------|------------------------|
| December 31, 2013 | (\$4,263)                | (\$338) | (\$294)  | (\$4,219)                | (\$350)                |
| December 31, 2015 | (\$2,299)                | (\$168) | (\$159)  | (\$2,290)                | (\$174)                |
| December 31, 2017 | N/A                      | N/A     | N/A      | (\$2,427)                | (\$171)                |
| <b>Total</b>      |                          |         |          | <b>(\$8,936)</b>         | <b>(\$695)</b>         |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$70,436        |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 12,517          |
| c. Benefit payments during 2017  | 0               |
| d. Interest at 7.20% to December 31, 2017  | 5,522           |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 88,475          |
| 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.)               | 88,475          |
| 2. Actuarial accrued liability at December 31, 2017                                  | 65,831          |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 22,644          |
| 4. Expected actuarial value of assets  |                 |
| a. Actuarial value of assets at December 31, 2016                                    | 63,057          |
| b. Contributions for 2017 <sup>1</sup>   | 1,706           |
| c. Benefit payments and expenses during 2017   | 0               |
| d. Interest at 7.20% to December 31, 2017  | 4,602           |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 69,365          |
| 5. Actuarial value of assets at December 31, 2017                                    | 74,767          |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 5,402           |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$28,046</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$7,379</b>   |
| 2. Expected increase  | 11,731           |
| 3. Liability (gain)/loss  | (22,644)         |
| 4. Asset (gain)/loss  | (5,402)          |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>(\$8,936)</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017 |   |                        | December 31, 2016 |   |                        |
|------------------------|-------------------|---|------------------------|-------------------|---|------------------------|
|                        | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$0               | \$0   | 0.00%                  | \$0               | \$0   | 0.00%                  |
| Tier 1 General Service | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 Police & Fire   | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 General Service | 0                 | 0   | 0.00%                  | 13,228            | 109,019   | 12.13%                 |
| <b>Total</b>           | <b>\$0</b>        | <b>\$0</b>  | <b>16.92%</b>          | <b>\$13,228</b>   | <b>\$109,019</b>                                  | <b>12.13%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | (\$8,936)         | \$7,379           |
| 2. Next year's Tier 1/Tier 2 UAL payment | (695)             | 478               |
| 3. Combined valuation payroll            | 18,017            | 109,019           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | (3.86%)           | 0.44%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 16.92%   | 12.13%  |
| b. Tier 1/Tier 2 UAL rate                             | (3.86%)  | 0.44%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 13.21%   | 12.71%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 11.67%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 11.67%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 2.33%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%   |
| c. Funded percentage   |                          | 114%    |
| 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.) |                          | 3.00%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 8.67%   |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 14.67%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 13.21%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%   |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | (3.86%) |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | (3.86%) |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 13.21%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 16.92%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 16.92%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 13.21%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 16.92%   | 12.13%  |
| b. Tier 1/Tier 2 UAL rate  | (3.86%)  | 0.44%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 13.21%   | 12.71%  |



# Data

## Demographic Information

### Employer Valuation Payroll

|                                   | General Service | Police & Fire | Total           |
|-----------------------------------|-----------------|---------------|-----------------|
| Tier 1                            | \$0             | \$0           | \$0             |
| Tier 2                            | 0               | 0             | 0               |
| Tier 1/Tier 2 valuation payroll   | 0               | 0             | 0               |
| OPSRP valuation payroll           | 18,017          | 0             | 18,017          |
| <b>Combined valuation payroll</b> | <b>\$18,017</b> | <b>\$0</b>    | <b>\$18,017</b> |

### Employer Member Census

|  | December 31 |          |          |          |          |          |          |          |
|--|-------------|----------|----------|----------|----------|----------|----------|----------|
|  | 2017        |          |          |          | 2016     |          |          |          |
|  | Tier 1      | Tier 2   | OPSRP    | Total    | Tier 1   | Tier 2   | OPSRP    | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 1        | 1        | 0        | 1        | 0        | 1        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 1        | 1        | 0        | 1        | 0        | 1        |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Police & Fire  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Total  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| <b>Dormant Members</b>   |             |          |          |          |          |          |          |          |
| General Service  | 0           | 1        | 0        | 1        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 1        | 0        | 1        | 0        | 0        | 0        | 0        |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Grand Total Number of Members</b>                                   | <b>0</b>    | <b>1</b> | <b>1</b> | <b>2</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>1</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             |       |                         |
| 35-39           |          |                                  | 60-64                             |       |                         |
| 40-44           |          |                                  | 65-69                             |       |                         |
| 45-49           |          |                                  | 70-74                             |       |                         |
| 50-54           | 1        | 676                              | 75-79                             |       |                         |
| 55-59           |          |                                  | 80-84                             |       |                         |
| 60-64           |          |                                  | 85-89                             |       |                         |
| 65-69           |          |                                  | 90-94                             |       |                         |
| 70-74           |          |                                  | 95-99                             |       |                         |
| 75+             |          |                                  | 100+                              |       |                         |
| <b>Total</b>    | <b>1</b> | <b>676</b>                       | <b>Total</b>                      |       |                         |

## 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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October 2018

Owyhee Irrigation District/2533  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
Owyhee Irrigation District/2533

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.



October 2018  
Owyhee Irrigation District/2533

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**

**INDEPENDENT EMPLOYERS**

**Owyhee Irrigation District -- #2533**

**October 2018**

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# Executive Summary

Milliman has prepared this report for Owyhee Irrigation District to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Owyhee Irrigation District.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Owyhee Irrigation District***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 16.31%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 14.09%        | 14.09%          | 14.09%        |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>31.85%</b> | <b>23.94%</b>   | <b>28.57%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>31.91%</b> | <b>23.94%</b>   | <b>28.57%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 78%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 30.40%             | 30.40%                        |
| Minimum 2021-2023 Rate                                       | 24.32%             | 18.24%                        |
| Maximum 2021-2023 Rate                                       | 36.48%             | 42.56%                        |

# 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               | \$6,153,054                   | \$8,361,630                           | \$2,208,576          | 74%                  | \$1,221,590         | 181%  |
| 12/31/2013               | 7,013,954                     | 8,601,934                             | 1,587,980            | 82%                  | 1,350,553           | 118%  |
| 12/31/2014               | 6,932,463                     | 9,470,845                             | 2,538,382            | 73%                  | 1,286,014           | 197%  |
| 12/31/2015               | 6,802,734                     | 9,512,700                             | 2,709,966            | 72%                  | 1,333,645           | 203%  |
| 12/31/2016               | 7,072,081                     | 9,926,256                             | 2,854,175            | 71%                  | 1,373,089           | 208%  |
| 12/31/2017               | 7,983,345                     | 10,186,710                            | 2,203,366            | 78%                  | 1,297,380           | 170%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Owyhee Irrigation District***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$2,203,365               | \$2,854,175       |
| Allocated pooled OPSRP UAL                       | 195,504                   | 236,394           |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 2,398,869                 | 3,090,569         |
| Combined valuation payroll                       | 1,297,380                 | 1,373,089         |
| Net pension UAL as a percentage of payroll       | 185%                      | 225%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$14,866)                | (\$187)           |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$88,405                  | \$108,862         |
| Tier 1/Tier 2 valuation payroll                                  | 542,158                   | 656,256           |
| Tier 1/Tier 2 pension normal cost rate                           | 16.31%                    | 16.59%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$10,186,710              | \$9,926,256       |
| Actuarial asset value  | 7,983,345                 | 7,072,081         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 2,203,365                 | 2,854,175         |
| Tier 1/ Tier 2 Funded status                                     | 78%                       | 71%               |
| Combined valuation payroll                                       | \$1,297,380               | \$1,373,089       |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 170%                      | 208%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 14.09%                    | 15.22%            |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 10                        | 13                |
| Tier 1/Tier 2 dormant members                                    | 2                         | 1                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 29                        | 28                |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 1,297,380         | 1,373,089         |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$864,609          | \$1,024,023        |
| 2. Employer reserves                                  | 3,914,779          | 3,273,817          |
| 3. Benefits in force reserve                          | 3,203,957          | 2,774,242          |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$7,983,345</b> | <b>\$7,072,081</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$7,072,081                               |
| 2. Regular employer contributions   | 230,002                                   |
| 3. Benefit payments and expenses  | (596,819)                                 |
| 4. Adjustments <sup>1</sup>   | 265,336                                   |
| 5. Interest credited  | 1,012,744                                 |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$7,983,345</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 55,911            | 78,635            |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 32,494            | 30,227            |
| <b>Total</b>           | <b>\$88,405</b>   | <b>\$108,862</b>  |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$88,405       | \$88,405      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017   | December 31, 2016  |
|--|---------------------|--------------------|
| Active Members                           |                     |                    |
| ▪ Tier 1 Police & Fire                   | \$0                 | \$0                |
| ▪ Tier 1 General Service                 | 1,759,516           | 2,427,310          |
| ▪ Tier 2 Police & Fire                   | 0                   | 0                  |
| ▪ Tier 2 General Service                 | 707,838             | 627,500            |
| ▪ <b>Total Active Members</b>            | <b>\$2,467,354</b>  | <b>\$3,054,810</b> |
| Dormant Members                          | 462,094             | 319,658            |
| Retired Members and Beneficiaries        | 7,257,263           | 6,551,788          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$10,186,710</b> | <b>\$9,926,256</b> |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$10,186,710   | \$10,186,710  | \$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   | \$10,186,710      | \$9,926,256       |
| 2. Actuarial value of assets   | 7,983,345         | 7,072,081         |
| 3. Unfunded accrued liability (1. – 2.)                                    | 2,203,365         | 2,854,175         |
| 4. Funded percentage (2. ÷ 1.)   | 78%               | 71%               |
| 5. Combined valuation payroll  | \$1,297,380       | \$1,373,089       |
| 6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.) | 170%              | 208%              |

### 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<br>December 31, 2016 | Payment   | Interest  | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|-----------|-----------|--------------------------|------------------------|
| December 31, 2013 | \$1,577,455              | \$125,016 | \$108,779 | \$1,561,218              | \$129,390              |
| December 31, 2015 | \$1,122,932              | \$82,170  | \$77,698  | \$1,118,460              | \$85,048               |
| December 31, 2017 | N/A                      | N/A       | N/A       | (\$476,313)              | (\$33,631)             |
| <b>Total</b>      |                          |           |           | <b>\$2,203,365</b>       | <b>\$180,807</b>       |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$9,926,256      |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 102,983          |
| c. Benefit payments during 2017  | (592,215)        |
| d. Interest at 7.20% to December 31, 2017  | 697,078          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 10,134,102       |
| 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.)               | 10,134,102       |
| 2. Actuarial accrued liability at December 31, 2017                                  | 10,186,710       |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (52,608)         |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 7,072,081        |
| b. Contributions for 2017 <sup>1</sup>   | 230,002          |
| c. Benefit payments and expenses during 2017   | (596,819)        |
| d. Interest at 7.20% to December 31, 2017  | 495,984          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 7,201,249        |
| 5. Actuarial value of assets at December 31, 2017                                    | 7,983,345        |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 782,096          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$729,488</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                    |
|---|--------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$2,854,175</b> |
| 2. Expected increase  | 78,678             |
| 3. Liability (gain)/loss  | 52,608             |
| 4. Asset (gain)/loss  | (782,096)          |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                  |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$2,203,365</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017 |   |                        | December 31, 2016 |   |                        |
|------------------------|-------------------|---|------------------------|-------------------|---|------------------------|
|                        | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$0               | \$0   | 0.00%                  | \$0               | \$0   | 0.00%                  |
| Tier 1 General Service | 55,911            | 307,483   | 18.18%                 | 78,635            | 435,704   | 18.05%                 |
| Tier 2 Police & Fire   | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 General Service | 32,494            | 234,675   | 13.85%                 | 30,227            | 220,552   | 13.71%                 |
| <b>Total</b>           | <b>\$88,405</b>   | <b>\$542,158</b>                                  | <b>16.31%</b>          | <b>\$108,862</b>  | <b>\$656,256</b>                                  | <b>16.59%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$2,203,365       | \$2,854,175       |
| 2. Next year's Tier 1/Tier 2 UAL payment | 180,807           | 218,044           |
| 3. Combined valuation payroll            | 1,297,380         | 1,373,089         |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 13.94%            | 15.88%            |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 16.31%   | 16.59%  |
| b. Tier 1/Tier 2 UAL rate                             | 13.94%   | 15.88%  |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 30.40%   | 32.61%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |        |
|--|--------------------------|--------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 26.51% |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%  |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 26.51% |
| 4. Size of rate collar   |                          |        |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 5.30%  |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 5.30%  |
| c. Funded percentage   |                          | 78%    |
| 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.) |                          | 5.30%  |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 21.21% |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 31.81% |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 30.40% |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%  |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 13.94% |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 13.94% |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 30.40% |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%  |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%  |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 16.31% |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 16.31% |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 30.40% |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 16.31%   | 16.59%  |
| b. Tier 1/Tier 2 UAL rate  | 13.94%   | 15.08%  |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 30.40%   | 31.81%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service    | Police & Fire | Total              |
|-----------------------------------|--------------------|---------------|--------------------|
| Tier 1                            | \$307,483          | \$0           | \$307,483          |
| Tier 2                            | 234,675            | 0             | 234,675            |
| Tier 1/Tier 2 valuation payroll   | 542,158            | 0             | 542,158            |
| OPSRP valuation payroll           | 755,222            | 0             | 755,222            |
| <b>Combined valuation payroll</b> | <b>\$1,297,380</b> | <b>\$0</b>    | <b>\$1,297,380</b> |

### *Employer Member Census*

|  | December 31 |          |           |           |           |          |           |           |
|--|-------------|----------|-----------|-----------|-----------|----------|-----------|-----------|
|  | 2017        |          |           |           | 2016      |          |           |           |
|  | Tier 1      | Tier 2   | OPSRP     | Total     | Tier 1    | Tier 2   | OPSRP     | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |          |           |           |           |          |           |           |
| General Service  | 6           | 4        | 20        | 30        | 9         | 4        | 19        | 32        |
| Police & Fire  | 0           | 0        | 0         | 0         | 0         | 0        | 0         | 0         |
| Total  | 6           | 4        | 20        | 30        | 9         | 4        | 19        | 32        |
| <b>Active Members with previous service segments with the employer</b> |             |          |           |           |           |          |           |           |
| General Service  | 2           | 1        | N/A       | 3         | 3         | 1        | N/A       | 4         |
| Police & Fire  | 0           | 0        | N/A       | 0         | 0         | 0        | N/A       | 0         |
| Total  | 2           | 1        | N/A       | 3         | 3         | 1        | N/A       | 4         |
| <b>Dormant Members</b>   |             |          |           |           |           |          |           |           |
| General Service  | 2           | 0        | 2         | 4         | 1         | 0        | 1         | 2         |
| Police & Fire  | 0           | 0        | 0         | 0         | 0         | 0        | 0         | 0         |
| Total  | 2           | 0        | 2         | 4         | 1         | 0        | 1         | 2         |
| <b>Retired Members and Beneficiaries</b>                               |             |          |           |           |           |          |           |           |
| General Service  | 27          | 2        | 2         | 31        | 26        | 2        | 2         | 30        |
| Police & Fire  | 0           | 0        | 0         | 0         | 0         | 0        | 0         | 0         |
| Total  | 27          | 2        | 2         | 31        | 26        | 2        | 2         | 30        |
| <b>Grand Total Number of Members</b>                                   | <b>37</b>   | <b>7</b> | <b>24</b> | <b>68</b> | <b>39</b> | <b>7</b> | <b>22</b> | <b>68</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |           |
| 45-49        |                  |          |          | 1        |          |          |          |          |          | 1         |
| 50-54        |                  |          |          |          |          |          |          |          |          |           |
| 55-59        |                  |          |          | 1        |          | 3        | 1        |          |          | 5         |
| 60-64        |                  |          |          | 2        | 1        | 1        |          |          |          | 4         |
| 65-69        |                  |          |          |          |          |          |          |          |          |           |
| 70-74        |                  |          |          |          |          |          |          |          |          |           |
| 75+          |                  |          |          |          |          |          |          |          |          |           |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>4</b> | <b>1</b> | <b>4</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>10</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             | 2         | 1,947                   |
| 35-39           |          |                                  | 60-64                             | 2         | 1,959                   |
| 40-44           |          |                                  | 65-69                             | 3         | 2,650                   |
| 45-49           |          |                                  | 70-74                             | 7         | 1,868                   |
| 50-54           |          |                                  | 75-79                             | 7         | 1,851                   |
| 55-59           | 1        | 740                              | 80-84                             | 6         | 938                     |
| 60-64           | 1        | 2,100                            | 85-89                             | 2         | 1,652                   |
| 65-69           |          |                                  | 90-94                             |           |                         |
| 70-74           |          |                                  | 95-99                             |           |                         |
| 75+             |          |                                  | 100+                              |           |                         |
| <b>Total</b>    | <b>2</b> | <b>1,420</b>                     | <b>Total</b>                      | <b>29</b> | <b>1,749</b>            |

## 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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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.



October 2018

Polk County Fire District #1/2688  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Polk County Fire District #1/2688

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.



October 2018  
Polk County Fire District #1/2688

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**

**INDEPENDENT EMPLOYERS**

**Polk County Fire District #1 -- #2688**

**October 2018**

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# Executive Summary

Milliman has prepared this report for Polk County Fire District #1 to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Polk County Fire District #1.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Polk County Fire District #1***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 19.52%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 5.39%         | 5.39%           | 5.39%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>26.36%</b> | <b>15.24%</b>   | <b>19.87%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>26.42%</b> | <b>15.24%</b>   | <b>19.87%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 78%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 24.91%             | 24.91%                        |
| Minimum 2021-2023 Rate                                       | 19.93%             | 14.95%                        |
| Maximum 2021-2023 Rate                                       | 29.89%             | 34.87%                        |

# 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               | \$3,362,223                   | \$3,697,465                           | \$335,242            | 91%                  | \$1,132,943         | 30%   |
| 12/31/2013               | 3,617,028                     | 4,043,451                             | 426,423              | 89%                  | 924,111             | 46%   |
| 12/31/2014               | 3,853,496                     | 4,937,704                             | 1,084,208            | 78%                  | 979,822             | 111%  |
| 12/31/2015               | 3,877,835                     | 5,265,161                             | 1,387,326            | 74%                  | 1,125,528           | 123%  |
| 12/31/2016               | 4,166,713                     | 5,753,630                             | 1,586,917            | 72%                  | 1,051,563           | 151%  |
| 12/31/2017               | 4,856,667                     | 6,232,121                             | 1,375,454            | 78%                  | 1,208,962           | 114%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Polk County Fire District #1***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$1,375,454               | \$1,586,917       |
| Allocated pooled OPSRP UAL                       | 182,180                   | 181,039           |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 1,557,634                 | 1,767,956         |
| Combined valuation payroll                       | 1,208,962                 | 1,051,563         |
| Net pension UAL as a percentage of payroll       | 129%                      | 168%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$13,853)                | (\$143)           |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$125,306                 | \$116,537         |
| Tier 1/Tier 2 valuation payroll                                  | 641,954                   | 599,661           |
| Tier 1/Tier 2 pension normal cost rate                           | 19.52%                    | 19.43%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$6,232,121               | \$5,753,630       |
| Actuarial asset value  | 4,856,667                 | 4,166,713         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 1,375,454                 | 1,586,917         |
| Tier 1/ Tier 2 Funded status                                     | 78%                       | 72%               |
| Combined valuation payroll                                       | \$1,208,962               | \$1,051,563       |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 114%                      | 151%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 5.39%                     | 5.48%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 7                         | 7                 |
| Tier 1/Tier 2 dormant members                                    | 6                         | 6                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 16                        | 16                |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 1,208,962         | 1,051,563         |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$361,365          | \$311,067          |
| 2. Employer reserves                                  | 3,636,473          | 3,025,547          |
| 3. Benefits in force reserve                          | 858,829            | 830,099            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$4,856,667</b> | <b>\$4,166,713</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$4,166,713                               |
| 2. Regular employer contributions   | 125,440                                   |
| 3. Benefit payments and expenses  | (159,979)                                 |
| 4. Adjustments <sup>1</sup>   | 76,354                                    |
| 5. Interest credited  | 648,139                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$4,856,667</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 113,592           | 105,331           |
| Tier 2 General Service | 11,714            | 11,206            |
| <b>Total</b>           | <b>\$125,306</b>  | <b>\$116,537</b>  |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$125,306      | \$125,306     | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017  | December 31, 2016  |
|--|--------------------|--------------------|
| Active Members                           |                    |                    |
| ▪ Tier 1 Police & Fire                   | \$898,998          | \$814,769          |
| ▪ Tier 1 General Service                 | 339,262            | 309,982            |
| ▪ Tier 2 Police & Fire                   | 2,134,957          | 1,831,148          |
| ▪ Tier 2 General Service                 | 180,116            | 160,955            |
| ▪ <b>Total Active Members</b>            | <b>\$3,553,333</b> | <b>\$3,116,854</b> |
| Dormant Members                          | 733,458            | 676,373            |
| Retired Members and Beneficiaries        | 1,945,330          | 1,960,403          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$6,232,121</b> | <b>\$5,753,630</b> |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$6,232,121    | \$6,232,121   | \$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  | \$6,232,121       | \$5,753,630       |
| 2. Actuarial value of assets  | 4,856,667         | 4,166,713         |
| 3. Unfunded accrued liability (1. – 2.)                                       | 1,375,454         | 1,586,917         |
| 4. Funded percentage (2. ÷ 1.)  | 78%               | 72%               |
| 5. Combined valuation payroll   | \$1,208,962       | \$1,051,563       |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 114%              | 151%              |

### 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<br>December 31, 2016 | Payment  | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|----------|----------|--------------------------|------------------------|
| December 31, 2013 | \$423,596                | \$33,571 | \$29,211 | \$419,236                | \$34,745               |
| December 31, 2015 | \$960,992                | \$70,320 | \$66,493 | \$957,165                | \$72,783               |
| December 31, 2017 | N/A                      | N/A      | N/A      | (\$947)                  | (\$67)                 |
| <b>Total</b>      |                          |          |          | <b>\$1,375,454</b>       | <b>\$107,461</b>       |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$5,753,630      |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 110,255          |
| c. Benefit payments during 2017  | (158,745)        |
| d. Interest at 7.20% to December 31, 2017  | 412,516          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 6,117,656        |
| 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.)               | 6,117,656        |
| 2. Actuarial accrued liability at December 31, 2017                                  | 6,232,121        |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (114,465)        |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 4,166,713        |
| b. Contributions for 2017 <sup>1</sup>   | 125,440          |
| c. Benefit payments and expenses during 2017   | (159,979)        |
| d. Interest at 7.20% to December 31, 2017  | 298,760          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 4,430,934        |
| 5. Actuarial value of assets at December 31, 2017                                    | 4,856,667        |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 425,733          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$311,268</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                    |
|---|--------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$1,586,917</b> |
| 2. Expected increase  | 99,805             |
| 3. Liability (gain)/loss  | 114,465            |
| 4. Asset (gain)/loss  | (425,733)          |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                  |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$1,375,454</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 113,592           | 572,914                                  | 19.83%           | 105,331           | 533,058                                  | 19.76%           |
| Tier 2 General Service | 11,714            | 69,040                                   | 16.97%           | 11,206            | 66,603                                   | 16.83%           |
| <b>Total</b>           | <b>\$125,306</b>  | <b>\$641,954</b>                         | <b>19.52%</b>    | <b>\$116,537</b>  | <b>\$599,661</b>                         | <b>19.43%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$1,375,454       | \$1,586,917       |
| 2. Next year's Tier 1/Tier 2 UAL payment | 107,461           | 118,177           |
| 3. Combined valuation payroll            | 1,208,962         | 1,051,563         |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 8.89%             | 11.24%            |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 19.52%   | 19.43%  |
| b. Tier 1/Tier 2 UAL rate                             | 8.89%  | 11.24%  |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 28.56%   | 30.81%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 20.76%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 20.76%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 4.15%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 4.15%   |
| c. Funded percentage   |                          | 78%     |
| 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.) |                          | 4.15%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 16.61%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 24.91%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 28.56%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (3.65%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 8.89%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 5.24%   |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 24.91%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 19.52%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 19.52%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 24.91%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates        |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate | 19.52%   | 19.43%  |
| b. Tier 1/Tier 2 UAL rate                          | 5.24%  | 5.34%   |
| c. Multnomah Fire District #10 rate                | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate                | 24.91%   | 24.91%  |
| <i>(a. + b. + c., minimum of 5.94%)</i>            |  |   |



# Data

## Demographic Information

### Employer Valuation Payroll

|                                   | General Service  | Police & Fire      | Total              |
|-----------------------------------|------------------|--------------------|--------------------|
| Tier 1                            | \$0              | \$0                | \$0                |
| Tier 2                            | 69,040           | 572,914            | 641,954            |
| Tier 1/Tier 2 valuation payroll   | 69,040           | 572,914            | 641,954            |
| OPSRP valuation payroll           | 35,301           | 531,706            | 567,008            |
| <b>Combined valuation payroll</b> | <b>\$104,341</b> | <b>\$1,104,620</b> | <b>\$1,208,962</b> |

### Employer Member Census

|  | December 31 |           |           |           |           |           |          |           |
|--|-------------|-----------|-----------|-----------|-----------|-----------|----------|-----------|
|  | 2017        |           |           |           | 2016      |           |          |           |
|  | Tier 1      | Tier 2    | OPSRP     | Total     | Tier 1    | Tier 2    | OPSRP    | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |           |           |           |           |           |          |           |
| General Service  | 0           | 1         | 1         | 2         | 0         | 1         | 1        | 2         |
| Police & Fire  | 0           | 6         | 8         | 14        | 0         | 6         | 5        | 11        |
| Total  | 0           | 7         | 9         | 16        | 0         | 7         | 6        | 13        |
| <b>Active Members with previous service segments with the employer</b> |             |           |           |           |           |           |          |           |
| General Service  | 7           | 2         | N/A       | 9         | 7         | 2         | N/A      | 9         |
| Police & Fire  | 5           | 3         | N/A       | 8         | 5         | 3         | N/A      | 8         |
| Total  | 12          | 5         | N/A       | 17        | 12        | 5         | N/A      | 17        |
| <b>Dormant Members</b>   |             |           |           |           |           |           |          |           |
| General Service  | 0           | 0         | 0         | 0         | 0         | 0         | 0        | 0         |
| Police & Fire  | 6           | 0         | 0         | 6         | 6         | 0         | 0        | 6         |
| Total  | 6           | 0         | 0         | 6         | 6         | 0         | 0        | 6         |
| <b>Retired Members and Beneficiaries</b>                               |             |           |           |           |           |           |          |           |
| General Service  | 4           | 1         | 0         | 5         | 4         | 1         | 0        | 5         |
| Police & Fire  | 11          | 0         | 1         | 12        | 11        | 0         | 1        | 12        |
| Total  | 15          | 1         | 1         | 17        | 15        | 1         | 1        | 17        |
| <b>Grand Total Number of Members</b>                                   | <b>33</b>   | <b>13</b> | <b>10</b> | <b>56</b> | <b>33</b> | <b>13</b> | <b>7</b> | <b>53</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          | 2        |          |          |          |          |          | 2        |
| 45-49        |                  |          | 1        | 1        | 1        |          |          |          |          | 3        |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          | 1        |          |          |          |          |          |          | 1        |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>2</b> | <b>4</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>7</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             | 1         | 239                     |
| 35-39           |          |                                  | 60-64                             | 3         | 1,209                   |
| 40-44           |          |                                  | 65-69                             | 8         | 703                     |
| 45-49           | 2        | 100                              | 70-74                             | 4         | 518                     |
| 50-54           |          |                                  | 75-79                             |           |                         |
| 55-59           | 2        | 1,310                            | 80-84                             |           |                         |
| 60-64           | 2        | 697                              | 85-89                             |           |                         |
| 65-69           |          |                                  | 90-94                             |           |                         |
| 70-74           |          |                                  | 95-99                             |           |                         |
| 75+             |          |                                  | 100+                              |           |                         |
| <b>Total</b>    | <b>6</b> | <b>703</b>                       | <b>Total</b>                      | <b>16</b> | <b>723</b>              |

# 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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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.



October 2018

Polk County/2037

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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Polk County/2037

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.



October 2018  
Polk County/2037

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**

**INDEPENDENT EMPLOYERS**

**Polk County -- #2037**

**October 2018**

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# Executive Summary

Milliman has prepared this report for Polk County to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Polk County.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### *Employer Rates Effective July 1, 2019 for Polk County*

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 16.12%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 6.91%         | 6.91%           | 6.91%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>24.48%</b> | <b>16.76%</b>   | <b>21.39%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>24.54%</b> | <b>16.76%</b>   | <b>21.39%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 74%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 23.03%             | 23.03%                        |
| Minimum 2021-2023 Rate                                       | 18.42%             | 13.81%                        |
| Maximum 2021-2023 Rate                                       | 27.64%             | 32.25%                        |

# 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               | \$64,520,822                  | \$76,733,759                          | \$12,212,937         | 84%                  | \$14,922,763        | 82%   |
| 12/31/2013               | 71,511,022                    | 79,488,788                            | 7,977,766            | 90%                  | 14,698,729          | 54%   |
| 12/31/2014               | 73,270,515                    | 92,628,817                            | 19,358,302           | 79%                  | 13,757,575          | 141%  |
| 12/31/2015               | 69,808,717                    | 95,739,939                            | 25,931,222           | 73%                  | 15,014,365          | 173%  |
| 12/31/2016               | 70,925,948                    | 101,594,856                           | 30,668,908           | 70%                  | 17,362,845          | 177%  |
| 12/31/2017               | 78,085,548                    | 105,710,248                           | 27,624,700           | 74%                  | 18,599,703          | 149%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Polk County***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$27,624,700              | \$30,668,908      |
| Allocated pooled OPSRP UAL                       | 2,802,810                 | 2,989,225         |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 30,427,510                | 33,658,133        |
| Combined valuation payroll                       | 18,599,703                | 17,362,845        |
| Net pension UAL as a percentage of payroll       | 164%                      | 194%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$213,119)               | (\$2,364)         |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$1,058,147               | \$1,082,400       |
| Tier 1/Tier 2 valuation payroll                                  | 6,563,460                 | 6,678,624         |
| Tier 1/Tier 2 pension normal cost rate                           | 16.12%                    | 16.21%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$105,710,248             | \$101,594,856     |
| Actuarial asset value  | 78,085,548                | 70,925,948        |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 27,624,700                | 30,668,908        |
| Tier 1/ Tier 2 Funded status                                     | 74%                       | 70%               |
| Combined valuation payroll                                       | \$18,599,703              | \$17,362,845      |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 149%                      | 177%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 6.91%                     | 6.82%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 91                        | 99                |
| Tier 1/Tier 2 dormant members                                    | 90                        | 100               |
| Tier 1/Tier 2 retirees and beneficiaries                         | 444                       | 421               |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 18,599,703        | 17,362,845        |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017   | December 31, 2016   |
|---|---------------------|---------------------|
| 1. Member reserves                                    | \$9,148,227         | \$9,264,841         |
| 2. Employer reserves                                  | 39,604,659          | 34,836,682          |
| 3. Benefits in force reserve                          | 29,332,662          | 26,824,425          |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$78,085,548</b> | <b>\$70,925,948</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$70,925,948                              |
| 2. Regular employer contributions   | 1,392,493                                 |
| 3. Benefit payments and expenses  | (5,463,956)                               |
| 4. Adjustments <sup>1</sup>   | 1,082,689                                 |
| 5. Interest credited  | 10,148,374                                |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$78,085,548</b>                       |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification

|                        | December 31, 2017  | December 31, 2016  |
|------------------------|--------------------|--------------------|
| Tier 1 Police & Fire   | \$105,416          | \$102,542          |
| Tier 1 General Service | 240,801            | 295,259            |
| Tier 2 Police & Fire   | 360,843            | 341,414            |
| Tier 2 General Service | 351,087            | 343,185            |
| <b>Total</b>           | <b>\$1,058,147</b> | <b>\$1,082,400</b> |

### Change in Tier 1/Tier 2 Normal Cost

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$1,058,147    | \$1,058,147   | \$0        |



## Tier 1/Tier 2 Valuation Results

### Liabilities

#### ***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.

#### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017    | December 31, 2016    |
|--|----------------------|----------------------|
| Active Members                           |                      |                      |
| ▪ Tier 1 Police & Fire                   | \$3,332,558          | \$3,242,565          |
| ▪ Tier 1 General Service                 | 11,113,932           | 12,312,788           |
| ▪ Tier 2 Police & Fire                   | 7,667,312            | 7,003,114            |
| ▪ Tier 2 General Service                 | 10,317,648           | 9,179,014            |
| ▪ <b>Total Active Members</b>            | <b>\$32,431,450</b>  | <b>\$31,737,481</b>  |
| Dormant Members                          | 6,837,569            | 6,507,481            |
| Retired Members and Beneficiaries        | 66,441,229           | 63,349,894           |
| <b>Total Actuarial Accrued Liability</b> | <b>\$105,710,248</b> | <b>\$101,594,856</b> |

#### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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

|                             | Before<br>Changes | After<br>Changes | Net<br>Change |
|-----------------------------|-------------------|------------------|---------------|
| Actuarial Accrued Liability | \$105,710,248     | \$105,710,248    | \$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  | \$105,710,248     | \$101,594,856     |
| 2. Actuarial value of assets  | 78,085,548        | 70,925,948        |
| 3. Unfunded accrued liability (1. – 2.)                                       | 27,624,700        | 30,668,908        |
| 4. Funded percentage (2. ÷ 1.)  | 74%               | 70%               |
| 5. Combined valuation payroll   | \$18,599,703      | \$17,362,845      |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 149%              | 177%              |

#### 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<br>December 31, 2016 | Payment     | Interest    | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|-------------|-------------|--------------------------|------------------------|
| December 31, 2013 | \$7,924,891              | \$628,062   | \$546,488   | \$7,843,317              | \$650,035              |
| December 31, 2015 | \$17,955,126             | \$1,313,854 | \$1,242,346 | \$17,883,618             | \$1,359,868            |
| December 31, 2017 | N/A                      | N/A         | N/A         | \$1,897,765              | \$133,995              |
| <b>Total</b>      |                          |             |             | <b>\$27,624,700</b>      | <b>\$2,143,898</b>     |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$101,594,856      |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 1,024,048          |
| c. Benefit payments during 2017  | (5,421,810)        |
| d. Interest at 7.20% to December 31, 2017  | 7,156,510          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 104,353,604        |
| 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.)               | 104,353,604        |
| 2. Actuarial accrued liability at December 31, 2017                                  | 105,710,248        |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (1,356,644)        |
| 4. Expected actuarial value of assets  |                    |
| a. Actuarial value of assets at December 31, 2016                                    | 70,925,948         |
| b. Contributions for 2017 <sup>1</sup>   | 1,392,493          |
| c. Benefit payments and expenses during 2017   | (5,463,956)        |
| d. Interest at 7.20% to December 31, 2017  | 4,960,096          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 71,814,581         |
| 5. Actuarial value of assets at December 31, 2017                                    | 78,085,548         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 6,270,968          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$4,914,324</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                     |
|---|---------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$30,668,908</b> |
| 2. Expected increase  | 1,870,116           |
| 3. Liability (gain)/loss  | 1,356,644           |
| 4. Asset (gain)/loss  | (6,270,968)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                   |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$27,624,700</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017  |   |                        | December 31, 2016  |   |                        |
|------------------------|--------------------|---|------------------------|--------------------|---|------------------------|
|                        | Normal Cost        | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost        | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$105,416          | \$456,638   | 23.09%                 | \$102,542          | \$453,443   | 22.61%                 |
| Tier 1 General Service | 240,801            | 1,403,711   | 17.15%                 | 295,259            | 1,679,732   | 17.58%                 |
| Tier 2 Police & Fire   | 360,843            | 1,816,909   | 19.86%                 | 341,414            | 1,717,053   | 19.88%                 |
| Tier 2 General Service | 351,087            | 2,886,202   | 12.16%                 | 343,185            | 2,828,396   | 12.13%                 |
| <b>Total</b>           | <b>\$1,058,147</b> | <b>\$6,563,460</b>                                | <b>16.12%</b>          | <b>\$1,082,400</b> | <b>\$6,678,624</b>                                | <b>16.21%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$27,624,700      | \$30,668,908      |
| 2. Next year's Tier 1/Tier 2 UAL payment | 2,143,898         | 2,280,043         |
| 3. Combined valuation payroll            | 18,599,703        | 17,362,845        |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 11.53%            | 13.13%            |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 16.12%   | 16.21%  |
| b. Tier 1/Tier 2 UAL rate                             | 11.53%   | 13.13%  |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 27.80%   | 29.48%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 19.19%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 19.19%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.84%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.84%   |
| c. Funded percentage   |                          | 74%     |
| 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.) |                          | 3.84%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 15.35%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 23.03%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 27.80%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (4.77%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 11.53%  |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 6.76%   |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 23.03%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 16.12%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 16.12%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 23.03%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates        |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate | 16.12%   | 16.21%  |
| b. Tier 1/Tier 2 UAL rate                          | 6.76%  | 6.68%   |
| c. Multnomah Fire District #10 rate                | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate                | 23.03%   | 23.03%  |
| <i>(a. + b. + c., minimum of 5.94%)</i>            |  |   |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service     | Police & Fire      | Total               |
|-----------------------------------|---------------------|--------------------|---------------------|
| Tier 1                            | \$1,403,711         | \$456,638          | \$1,860,349         |
| Tier 2                            | 2,886,202           | 1,816,909          | 4,703,111           |
| Tier 1/Tier 2 valuation payroll   | 4,289,913           | 2,273,547          | 6,563,460           |
| OPSRP valuation payroll           | 9,624,781           | 2,411,462          | 12,036,243          |
| <b>Combined valuation payroll</b> | <b>\$13,914,694</b> | <b>\$4,685,009</b> | <b>\$18,599,703</b> |

### *Employer Member Census*

|  | December 31 |            |            |              |            |            |            |              |
|--|-------------|------------|------------|--------------|------------|------------|------------|--------------|
|  | 2017        |            |            |              | 2016       |            |            |              |
|  | Tier 1      | Tier 2     | OPSRP      | Total        | Tier 1     | Tier 2     | OPSRP      | Total        |
| <b>Active Members <sup>1</sup></b>                                     |             |            |            |              |            |            |            |              |
| General Service  | 21          | 45         | 191        | 257          | 27         | 47         | 163        | 237          |
| Police & Fire  | 5           | 20         | 35         | 60           | 5          | 20         | 39         | 64           |
| Total  | 26          | 65         | 226        | 317          | 32         | 67         | 202        | 301          |
| <b>Active Members with previous service segments with the employer</b> |             |            |            |              |            |            |            |              |
| General Service  | 51          | 58         | N/A        | 109          | 67         | 62         | N/A        | 129          |
| Police & Fire  | 9           | 20         | N/A        | 29           | 11         | 23         | N/A        | 34           |
| Total  | 60          | 78         | N/A        | 138          | 78         | 85         | N/A        | 163          |
| <b>Dormant Members</b>   |             |            |            |              |            |            |            |              |
| General Service  | 36          | 44         | 35         | 115          | 39         | 47         | 29         | 115          |
| Police & Fire  | 3           | 7          | 3          | 13           | 6          | 8          | 3          | 17           |
| Total  | 39          | 51         | 38         | 128          | 45         | 55         | 32         | 132          |
| <b>Retired Members and Beneficiaries</b>                               |             |            |            |              |            |            |            |              |
| General Service  | 346         | 29         | 5          | 380          | 330        | 27         | 4          | 361          |
| Police & Fire  | 62          | 7          | 0          | 69           | 59         | 5          | 0          | 64           |
| Total  | 408         | 36         | 5          | 449          | 389        | 32         | 4          | 425          |
| <b>Grand Total Number of Members</b>                                   | <b>533</b>  | <b>230</b> | <b>269</b> | <b>1,032</b> | <b>544</b> | <b>239</b> | <b>238</b> | <b>1,021</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          | 7         | 1         |           |          |          |          |          | 8         |
| 40-44        |                  |          | 2         | 11        |           |          |          |          |          | 13        |
| 45-49        |                  | 1        | 4         | 11        | 4         |          |          |          |          | 20        |
| 50-54        |                  |          |           | 9         | 8         | 4        | 1        |          |          | 22        |
| 55-59        |                  | 1        | 2         | 4         | 3         | 1        |          |          |          | 11        |
| 60-64        |                  | 1        | 2         | 4         | 3         | 3        |          |          |          | 13        |
| 65-69        |                  |          |           | 1         | 2         |          |          | 1        |          | 4         |
| 70-74        |                  |          |           |           |           |          |          |          |          |           |
| 75+          |                  |          |           |           |           |          |          |          |          |           |
| <b>Total</b> | <b>0</b>         | <b>3</b> | <b>17</b> | <b>41</b> | <b>20</b> | <b>8</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>91</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |           |                                  | Retired Members and Beneficiaries |            |                         |
|-----------------|-----------|----------------------------------|-----------------------------------|------------|-------------------------|
| Age             | Count     | Average Deferred Monthly Benefit | Age                               | Count      | Average Monthly Benefit |
| <20             |           |                                  | <45                               |            |                         |
| 20-24           |           |                                  | 45-49                             | 4          | 51                      |
| 25-29           |           |                                  | 50-54                             | 18         | 934                     |
| 30-34           |           |                                  | 55-59                             | 20         | 1,142                   |
| 35-39           | 3         | 684                              | 60-64                             | 70         | 933                     |
| 40-44           | 16        | 532                              | 65-69                             | 107        | 1,031                   |
| 45-49           | 18        | 641                              | 70-74                             | 94         | 1,088                   |
| 50-54           | 12        | 711                              | 75-79                             | 55         | 1,036                   |
| 55-59           | 15        | 738                              | 80-84                             | 39         | 1,233                   |
| 60-64           | 12        | 882                              | 85-89                             | 23         | 583                     |
| 65-69           | 8         | 656                              | 90-94                             | 13         | 803                     |
| 70-74           | 4         | 401                              | 95-99                             | 1          | 578                     |
| 75+             | 2         | 196                              | 100+                              |            |                         |
| <b>Total</b>    | <b>90</b> | <b>661</b>                       | <b>Total</b>                      | <b>444</b> | <b>1,007</b>            |

## 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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October 2018

Polk Soil & Water Conservation District/2613  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Polk Soil & Water Conservation District/2613

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.



October 2018  
Polk Soil & Water Conservation District/2613

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.

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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**

**INDEPENDENT EMPLOYERS**

**Polk Soil & Water Conservation District -- #2613**

**October 2018**

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## Executive Summary

Milliman has prepared this report for Polk Soil & Water Conservation District to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Polk Soil & Water Conservation District.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Polk Soil & Water Conservation District***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 15.97%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 3.29%         | 3.29%           | 3.29%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>20.71%</b> | <b>13.14%</b>   | <b>17.77%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>20.77%</b> | <b>13.14%</b>   | <b>17.77%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 81%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 19.26%             | 19.26%                        |
| Minimum 2021-2023 Rate                                       | 15.41%             | 11.56%                        |
| Maximum 2021-2023 Rate                                       | 23.11%             | 26.96%                        |

# 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               | \$322,307                     | \$440,320                             | \$118,013            | 73%                  | \$218,163           | 54%   |
| 12/31/2013               | 360,579                       | 392,394                               | 31,815               | 92%                  | 198,395             | 16%   |
| 12/31/2014               | 365,179                       | 451,078                               | 85,899               | 81%                  | 190,563             | 45%   |
| 12/31/2015               | 356,282                       | 459,287                               | 103,005              | 78%                  | 195,141             | 53%   |
| 12/31/2016               | 361,269                       | 483,607                               | 122,338              | 75%                  | 222,718             | 55%   |
| 12/31/2017               | 397,114                       | 490,205                               | 93,091               | 81%                  | 234,012             | 40%   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Polk Soil & Water Conservation District***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$93,091                  | \$122,338         |
| Allocated pooled OPSRP UAL                       | 35,264                    | 38,344            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 128,355                   | 160,682           |
| Combined valuation payroll                       | 234,012                   | 222,718           |
| Net pension UAL as a percentage of payroll       | 55%                       | 72%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$2,681)                 | (\$30)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$11,055                  | \$0               |
| Tier 1/Tier 2 valuation payroll                                  | 69,209                    | 0                 |
| Tier 1/Tier 2 pension normal cost rate                           | 15.97%                    | 16.95%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$490,205                 | \$483,607         |
| Actuarial asset value  | 397,114                   | 361,269           |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 93,091                    | 122,338           |
| Tier 1/ Tier 2 Funded status                                     | 81%                       | 75%               |
| Combined valuation payroll                                       | \$234,012                 | \$222,718         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 40%                       | 55%               |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 3.29%                     | 2.86%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 1                         | 0                 |
| Tier 1/Tier 2 dormant members                                    | 1                         | 2                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 1                         | 1                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 234,012           | 222,718           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Member reserves                                    | \$62,976          | \$57,523          |
| 2. Employer reserves                                  | 203,342           | 177,273           |
| 3. Benefits in force reserve                          | 130,796           | 126,473           |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$397,114</b>  | <b>\$361,269</b>  |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$361,269                                 |
| 2. Regular employer contributions   | (889)                                     |
| 3. Benefit payments and expenses  | (24,364)                                  |
| 4. Adjustments <sup>1</sup>   | 10,780                                    |
| 5. Interest credited  | 50,318                                    |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$397,114</b>                          |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 11,055            | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$11,055</b>   | <b>\$0</b>        |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$11,055       | \$11,055      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017 | December 31, 2016 |
|--|-------------------|-------------------|
| Active Members                           |                   |                   |
| ▪ Tier 1 Police & Fire                   | \$0               | \$0               |
| ▪ Tier 1 General Service                 | 59,548            | 51,839            |
| ▪ Tier 2 Police & Fire                   | 0                 | 0                 |
| ▪ Tier 2 General Service                 | 16,119            | 16,490            |
| ▪ <b>Total Active Members</b>            | <b>\$75,667</b>   | <b>\$68,329</b>   |
| Dormant Members                          | 118,272           | 116,593           |
| Retired Members and Beneficiaries        | 296,266           | 298,685           |
| <b>Total Actuarial Accrued Liability</b> | <b>\$490,205</b>  | <b>\$483,607</b>  |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$490,205      | \$490,205     | \$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  | \$490,205         | \$483,607         |
| 2. Actuarial value of assets  | 397,114           | 361,269           |
| 3. Unfunded accrued liability (1. – 2.)                                       | 93,091            | 122,338           |
| 4. Funded percentage (2. ÷ 1.)  | 81%               | 75%               |
| 5. Combined valuation payroll   | \$234,012         | \$222,718         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 40%               | 55%               |

### 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<br>December 31, 2016 | Payment | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|---------|----------|--------------------------|------------------------|
| December 31, 2013 | \$31,605                 | \$2,505 | \$2,179  | \$31,279                 | \$2,592                |
| December 31, 2015 | \$71,196                 | \$5,210 | \$4,926  | \$70,912                 | \$5,392                |
| December 31, 2017 | N/A                      | N/A     | N/A      | (\$9,100)                | (\$643)                |
| <b>Total</b>      |                          |         |          | <b>\$93,091</b>          | <b>\$7,341</b>         |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$483,607       |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 0               |
| c. Benefit payments during 2017  | (24,176)        |
| d. Interest at 7.20% to December 31, 2017  | 33,949          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 493,380         |
| 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.)               | 493,380         |
| 2. Actuarial accrued liability at December 31, 2017                                  | 490,205         |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 3,175           |
| 4. Expected actuarial value of assets  |                 |
| a. Actuarial value of assets at December 31, 2016                                    | 361,269         |
| b. Contributions for 2017 <sup>1</sup>   | (889)           |
| c. Benefit payments and expenses during 2017   | (24,364)        |
| d. Interest at 7.20% to December 31, 2017  | 25,102          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 361,118         |
| 5. Actuarial value of assets at December 31, 2017                                    | 397,114         |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 35,996          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$39,171</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$122,338</b> |
| 2. Expected increase  | 9,924            |
| 3. Liability (gain)/loss  | (3,175)          |
| 4. Asset (gain)/loss  | (35,996)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$93,091</b>  |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 11,055            | 69,209                                   | 15.97%           | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| <b>Total</b>           | <b>\$11,055</b>   | <b>\$69,209</b>                          | <b>15.97%</b>    | <b>\$0</b>        | <b>\$0</b>                               | <b>16.95%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$93,091          | \$122,338         |
| 2. Next year's Tier 1/Tier 2 UAL payment | 7,341             | 9,094             |
| 3. Combined valuation payroll            | 234,012           | 222,718           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 3.14%             | 4.08%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 15.97%   | 16.95%  |
| b. Tier 1/Tier 2 UAL rate                             | 3.14%  | 4.08%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 19.26%   | 21.17%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |        |
|--|--------------------------|--------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 16.51% |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%  |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 16.51% |
| 4. Size of rate collar   |                          |        |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.30%  |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.30%  |
| c. Funded percentage   |                          | 81%    |
| 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.) |                          | 3.30%  |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 13.21% |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 19.81% |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 19.26% |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%  |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 3.14%  |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 3.14%  |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 19.26% |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%  |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%  |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 15.97% |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 15.97% |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 19.26% |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 15.97%   | 16.95%  |
| b. Tier 1/Tier 2 UAL rate  | 3.14%  | 2.72%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 19.26%   | 19.81%  |



# Data

## Demographic Information

### Employer Valuation Payroll

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$69,209         | \$0           | \$69,209         |
| Tier 2                            | 0                | 0             | 0                |
| Tier 1/Tier 2 valuation payroll   | 69,209           | 0             | 69,209           |
| OPSRP valuation payroll           | 164,803          | 0             | 164,803          |
| <b>Combined valuation payroll</b> | <b>\$234,012</b> | <b>\$0</b>    | <b>\$234,012</b> |

### Employer Member Census

|  | December 31 |          |          |           |          |          |          |           |
|--|-------------|----------|----------|-----------|----------|----------|----------|-----------|
|  | 2017        |          |          |           | 2016     |          |          |           |
|  | Tier 1      | Tier 2   | OPSRP    | Total     | Tier 1   | Tier 2   | OPSRP    | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |           |          |          |          |           |
| General Service  | 1           | 0        | 3        | 4         | 0        | 0        | 6        | 6         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Total  | 1           | 0        | 3        | 4         | 0        | 0        | 6        | 6         |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |           |          |          |          |           |
| General Service  | 1           | 2        | N/A      | 3         | 1        | 2        | N/A      | 3         |
| Police & Fire  | 0           | 0        | N/A      | 0         | 0        | 0        | N/A      | 0         |
| Total  | 1           | 2        | N/A      | 3         | 1        | 2        | N/A      | 3         |
| <b>Dormant Members</b>   |             |          |          |           |          |          |          |           |
| General Service  | 0           | 1        | 2        | 3         | 0        | 2        | 2        | 4         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Total  | 0           | 1        | 2        | 3         | 0        | 2        | 2        | 4         |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |           |          |          |          |           |
| General Service  | 1           | 0        | 0        | 1         | 1        | 0        | 0        | 1         |
| Police & Fire  | 0           | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Total  | 1           | 0        | 0        | 1         | 1        | 0        | 0        | 1         |
| <b>Grand Total Number of Members</b>                                   | <b>3</b>    | <b>3</b> | <b>5</b> | <b>11</b> | <b>2</b> | <b>4</b> | <b>8</b> | <b>14</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          | 1        |          |          |          |          | 1        |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             |          |                         |
| 35-39           |          |                                  | 60-64                             |          |                         |
| 40-44           |          |                                  | 65-69                             |          |                         |
| 45-49           |          |                                  | 70-74                             | 1        | 2,230                   |
| 50-54           | 1        | 1,229                            | 75-79                             |          |                         |
| 55-59           |          |                                  | 80-84                             |          |                         |
| 60-64           |          |                                  | 85-89                             |          |                         |
| 65-69           |          |                                  | 90-94                             |          |                         |
| 70-74           |          |                                  | 95-99                             |          |                         |
| 75+             |          |                                  | 100+                              |          |                         |
| <b>Total</b>    | <b>1</b> | <b>1,229</b>                     | <b>Total</b>                      | <b>1</b> | <b>2,230</b>            |

# 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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October 2018

Port of Astoria/2507  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
Port of Astoria/2507

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.



October 2018  
Port of Astoria/2507

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**

**INDEPENDENT EMPLOYERS**

**Port of Astoria -- #2507**

**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 Port of Astoria to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Port of Astoria.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### *Employer Rates Effective July 1, 2019 for Port of Astoria*

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 11.21%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 2.98%         | 2.98%           | 2.98%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>15.64%</b> | <b>12.83%</b>   | <b>17.46%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>15.70%</b> | <b>12.83%</b>   | <b>17.46%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 91%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 14.19%             | 14.19%                        |
| Minimum 2021-2023 Rate                                       | 11.19%             | 8.19%                         |
| Maximum 2021-2023 Rate                                       | 17.19%             | 20.19%                        |

# 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               | \$5,195,703                   | \$5,444,429                           | \$248,726            | 95%                  | \$1,487,753         | 17%   |
| 12/31/2013               | 5,438,787                     | 5,486,807                             | 48,020               | 99%                  | 1,294,017           | 4%  |
| 12/31/2014               | 5,452,817                     | 6,228,155                             | 775,338              | 88%                  | 1,418,154           | 55%   |
| 12/31/2015               | 5,233,641                     | 6,263,210                             | 1,029,569            | 84%                  | 1,503,469           | 68%   |
| 12/31/2016               | 5,129,723                     | 6,026,456                             | 896,733              | 85%                  | 1,617,954           | 55%   |
| 12/31/2017               | 5,911,834                     | 6,513,794                             | 601,960              | 91%                  | 1,712,169           | 35%   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### ***Port of Astoria***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$601,960                 | \$896,733         |
| Allocated pooled OPSRP UAL                       | 258,009                   | 278,551           |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 859,969                   | 1,175,284         |
| Combined valuation payroll                       | 1,712,169                 | 1,617,954         |
| Net pension UAL as a percentage of payroll       | 50%                       | 73%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$19,618)                | (\$220)           |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$24,590                  | \$22,903          |
| Tier 1/Tier 2 valuation payroll                                  | 219,336                   | 208,615           |
| Tier 1/Tier 2 pension normal cost rate                           | 11.21%                    | 10.98%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$6,513,794               | \$6,026,456       |
| Actuarial asset value  | 5,911,834                 | 5,129,723         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 601,960                   | 896,733           |
| Tier 1/ Tier 2 Funded status                                     | 91%                       | 85%               |
| Combined valuation payroll                                       | \$1,712,169               | \$1,617,954       |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 35%                       | 55%               |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 2.98%                     | 4.23%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 3                         | 3                 |
| Tier 1/Tier 2 dormant members                                    | 3                         | 4                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 34                        | 31                |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 1,712,169         | 1,617,954         |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$361,267          | \$344,525          |
| 2. Employer reserves                                  | 3,135,143          | 2,692,611          |
| 3. Benefits in force reserve                          | 2,415,423          | 2,092,587          |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$5,911,834</b> | <b>\$5,129,723</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$5,129,723                               |
| 2. Regular employer contributions   | 27,402                                    |
| 3. Benefit payments and expenses  | (449,934)                                 |
| 4. Adjustments <sup>1</sup>   | 433,664                                   |
| 5. Interest credited  | 770,979                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$5,911,834</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 24,590            | 22,903            |
| <b>Total</b>           | <b>\$24,590</b>   | <b>\$22,903</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$24,590       | \$24,590      | \$0        |



## Tier 1/Tier 2 Valuation Results

### Liabilities

#### ***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.

#### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017  | December 31, 2016  |
|--|--------------------|--------------------|
| Active Members                           |                    |                    |
| ▪ Tier 1 Police & Fire                   | \$0                | \$0                |
| ▪ Tier 1 General Service                 | 466,981            | 474,260            |
| ▪ Tier 2 Police & Fire                   | 0                  | 0                  |
| ▪ Tier 2 General Service                 | 423,925            | 377,385            |
| ▪ <b>Total Active Members</b>            | <b>\$890,906</b>   | <b>\$851,645</b>   |
| Dormant Members                          | 151,729            | 232,854            |
| Retired Members and Beneficiaries        | 5,471,159          | 4,941,957          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$6,513,794</b> | <b>\$6,026,456</b> |

#### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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

|                             | Before<br>Changes | After<br>Changes | Net<br>Change |
|-----------------------------|-------------------|------------------|---------------|
| Actuarial Accrued Liability | \$6,513,794       | \$6,513,794      | \$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  | \$6,513,794       | \$6,026,456       |
| 2. Actuarial value of assets  | 5,911,834         | 5,129,723         |
| 3. Unfunded accrued liability (1. – 2.)                                       | 601,960           | 896,733           |
| 4. Funded percentage (2. ÷ 1.)  | 91%               | 85%               |
| 5. Combined valuation payroll   | \$1,712,169       | \$1,617,954       |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 35%               | 55%               |

#### 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<br>December 31, 2016 | Payment  | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|----------|----------|--------------------------|------------------------|
| December 31, 2013 | \$47,701                 | \$3,780  | \$3,289  | \$47,210                 | \$3,913                |
| December 31, 2015 | \$981,341                | \$71,809 | \$67,901 | \$977,433                | \$74,324               |
| December 31, 2017 | N/A                      | N/A      | N/A      | (\$422,683)              | (\$29,844)             |
| <b>Total</b>      |                          |          |          | <b>\$601,960</b>         | <b>\$48,393</b>        |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$6,026,456      |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 21,672           |
| c. Benefit payments during 2017  | (446,464)        |
| d. Interest at 7.20% to December 31, 2017  | 418,612          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 6,020,276        |
| 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.)               | 6,020,276        |
| 2. Actuarial accrued liability at December 31, 2017                                  | 6,513,794        |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (493,518)        |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 5,129,723        |
| b. Contributions for 2017 <sup>1</sup>   | 27,402           |
| c. Benefit payments and expenses during 2017   | (449,934)        |
| d. Interest at 7.20% to December 31, 2017  | 354,129          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 5,061,319        |
| 5. Actuarial value of assets at December 31, 2017                                    | 5,911,834        |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 850,514          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$356,996</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$896,733</b> |
| 2. Expected increase  | 62,223           |
| 3. Liability (gain)/loss  | 493,518          |
| 4. Asset (gain)/loss  | (850,514)        |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$601,960</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017 |   |                        | December 31, 2016 |   |                        |
|------------------------|-------------------|---|------------------------|-------------------|---|------------------------|
|                        | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$0               | \$0   | 0.00%                  | \$0               | \$0   | 0.00%                  |
| Tier 1 General Service | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 Police & Fire   | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 General Service | 24,590            | 219,336   | 11.21%                 | 22,903            | 208,615   | 10.98%                 |
| <b>Total</b>           | <b>\$24,590</b>   | <b>\$219,336</b>                                  | <b>11.21%</b>          | <b>\$22,903</b>   | <b>\$208,615</b>                                  | <b>10.98%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$601,960         | \$896,733         |
| 2. Next year's Tier 1/Tier 2 UAL payment | 48,393            | 66,247            |
| 3. Combined valuation payroll            | 1,712,169         | 1,617,954         |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 2.83%             | 4.09%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 11.21%   | 10.98%  |
| b. Tier 1/Tier 2 UAL rate                             | 2.83%  | 4.09%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 14.19%   | 15.21%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |        |
|--|--------------------------|--------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 13.24% |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%  |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 13.24% |
| 4. Size of rate collar   |                          |        |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 2.65%  |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%  |
| c. Funded percentage   |                          | 91%    |
| 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.) |                          | 3.00%  |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 10.24% |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 16.24% |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 14.19% |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%  |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 2.83%  |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 2.83%  |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 14.19% |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%  |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%  |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 11.21% |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 11.21% |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 14.19% |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 11.21%   | 10.98%  |
| b. Tier 1/Tier 2 UAL rate  | 2.83%  | 4.09%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 14.19%   | 15.21%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service    | Police & Fire | Total              |
|-----------------------------------|--------------------|---------------|--------------------|
| Tier 1                            | \$0                | \$0           | \$0                |
| Tier 2                            | 219,336            | 0             | 219,336            |
| Tier 1/Tier 2 valuation payroll   | 219,336            | 0             | 219,336            |
| OPSRP valuation payroll           | 1,492,833          | 0             | 1,492,833          |
| <b>Combined valuation payroll</b> | <b>\$1,712,169</b> | <b>\$0</b>    | <b>\$1,712,169</b> |

### *Employer Member Census*

|  | December 31 |           |           |           |           |           |           |           |
|--|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|  | 2017        |           |           |           | 2016      |           |           |           |
|  | Tier 1      | Tier 2    | OPSRP     | Total     | Tier 1    | Tier 2    | OPSRP     | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |           |           |           |           |           |           |           |
| General Service  | 0           | 3         | 30        | 33        | 0         | 3         | 29        | 32        |
| Police & Fire  | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Total  | 0           | 3         | 30        | 33        | 0         | 3         | 29        | 32        |
| <b>Active Members with previous service segments with the employer</b> |             |           |           |           |           |           |           |           |
| General Service  | 3           | 1         | N/A       | 4         | 4         | 1         | N/A       | 5         |
| Police & Fire  | 0           | 0         | N/A       | 0         | 0         | 0         | N/A       | 0         |
| Total  | 3           | 1         | N/A       | 4         | 4         | 1         | N/A       | 5         |
| <b>Dormant Members</b>   |             |           |           |           |           |           |           |           |
| General Service  | 0           | 3         | 9         | 12        | 1         | 3         | 7         | 11        |
| Police & Fire  | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Total  | 0           | 3         | 9         | 12        | 1         | 3         | 7         | 11        |
| <b>Retired Members and Beneficiaries</b>                               |             |           |           |           |           |           |           |           |
| General Service  | 28          | 4         | 3         | 35        | 25        | 4         | 2         | 31        |
| Police & Fire  | 2           | 0         | 0         | 2         | 2         | 0         | 0         | 2         |
| Total  | 30          | 4         | 3         | 37        | 27        | 4         | 2         | 33        |
| <b>Grand Total Number of Members</b>                                   | <b>33</b>   | <b>11</b> | <b>42</b> | <b>86</b> | <b>32</b> | <b>11</b> | <b>38</b> | <b>81</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          | 1        |          |          |          |          |          |          | 1        |
| 55-59        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>1</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>3</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             | 1         | 440                     |
| 30-34           |          |                                  | 55-59                             | 2         | 37                      |
| 35-39           |          |                                  | 60-64                             | 5         | 1,620                   |
| 40-44           |          |                                  | 65-69                             | 9         | 942                     |
| 45-49           | 1        | 1,039                            | 70-74                             | 7         | 754                     |
| 50-54           |          |                                  | 75-79                             | 4         | 2,210                   |
| 55-59           |          |                                  | 80-84                             | 3         | 863                     |
| 60-64           | 1        | 180                              | 85-89                             | 1         | 2,769                   |
| 65-69           | 1        | 308                              | 90-94                             | 1         | 1,640                   |
| 70-74           |          |                                  | 95-99                             | 1         | 923                     |
| 75+             |          |                                  | 100+                              |           |                         |
| <b>Total</b>    | <b>3</b> | <b>509</b>                       | <b>Total</b>                      | <b>34</b> | <b>1,151</b>            |

## 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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October 2018

Port of Cascade Locks/2633  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
Port of Cascade Locks/2633

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.



October 2018  
Port of Cascade Locks/2633

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**

**INDEPENDENT EMPLOYERS**

**Port of Cascade Locks -- #2633**

**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 Port of Cascade Locks to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Port of Cascade Locks.

### Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

#### ***Employer Rates Effective July 1, 2019 for Port of Cascade Locks***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 14.16%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | (2.41%)       | (2.41%)         | (2.41%)       |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>13.20%</b> | <b>7.44%</b>    | <b>12.07%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>13.26%</b> | <b>7.44%</b>    | <b>12.07%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 93%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 11.75%             | 11.75%                        |
| Minimum 2021-2023 Rate                                       | 8.75%              | 5.75%                         |
| Maximum 2021-2023 Rate                                       | 14.75%             | 17.75%                        |

# 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               | \$5,740,612                   | \$5,705,510                           | (\$35,102)           | 101%                 | \$427,714           | (8%)  |
| 12/31/2013               | 6,273,515                     | 5,803,343                             | (470,172)            | 108%                 | 447,857             | (105%)  |
| 12/31/2014               | 6,314,643                     | 6,629,236                             | 314,593              | 95%                  | 387,075             | 81%   |
| 12/31/2015               | 6,322,162                     | 7,087,889                             | 765,727              | 89%                  | 538,108             | 142%  |
| 12/31/2016               | 6,371,793                     | 7,272,982                             | 901,189              | 88%                  | 502,227             | 179%  |
| 12/31/2017               | 6,891,294                     | 7,431,988                             | 540,693              | 93%                  | 493,641             | 110%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### *Port of Cascade Locks*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$540,694                 | \$901,189         |
| Allocated pooled OPSRP UAL                       | 74,387                    | 86,464            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 615,081                   | 987,653           |
| Combined valuation payroll                       | 493,641                   | 502,227           |
| Net pension UAL as a percentage of payroll       | 125%                      | 197%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$5,656)                 | (\$68)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$14,528                  | \$14,022          |
| Tier 1/Tier 2 valuation payroll                                  | 102,612                   | 100,232           |
| Tier 1/Tier 2 pension normal cost rate                           | 14.16%                    | 13.99%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$7,431,988               | \$7,272,982       |
| Actuarial asset value  | 6,891,294                 | 6,371,793         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 540,694                   | 901,189           |
| Tier 1/ Tier 2 Funded status                                     | 93%                       | 88%               |
| Combined valuation payroll                                       | \$493,641                 | \$502,227         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 110%                      | 179%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | (2.41%)                   | (2.24%)           |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 2                         | 2                 |
| Tier 1/Tier 2 dormant members                                    | 12                        | 13                |
| Tier 1/Tier 2 retirees and beneficiaries                         | 31                        | 33                |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

## Side Account Information

### Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

### 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 493,641           | 502,227           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | 0.00%             | 0.00%             |

<sup>1</sup> 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.

## Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$1,055,108        | \$1,083,669        |
| 2. Employer reserves                                  | 3,751,597          | 3,394,454          |
| 3. Benefits in force reserve                          | 2,084,590          | 1,893,670          |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$6,891,294</b> | <b>\$6,371,793</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$6,371,793                               |
| 2. Regular employer contributions   | (14,908)                                  |
| 3. Benefit payments and expenses  | (388,308)                                 |
| 4. Adjustments <sup>1</sup>   | 48,881                                    |
| 5. Interest credited  | 873,836                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$6,891,294</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 14,528            | 14,022            |
| <b>Total</b>           | <b>\$14,528</b>   | <b>\$14,022</b>   |

### Change in Tier 1/Tier 2 Normal Cost

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$14,528       | \$14,528      | \$0        |



## Tier 1/Tier 2 Valuation Results

### Liabilities

#### ***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.

#### ***Summary of Actuarial Accrued Liability by Tier/Member Classification***

|  | December 31, 2017  | December 31, 2016  |
|--|--------------------|--------------------|
| Active Members                           |                    |                    |
| ▪ Tier 1 Police & Fire                   | \$0                | \$0                |
| ▪ Tier 1 General Service                 | 385,552            | 366,682            |
| ▪ Tier 2 Police & Fire                   | 0                  | 0                  |
| ▪ Tier 2 General Service                 | 337,002            | 308,003            |
| ▪ <b>Total Active Members</b>            | <b>\$722,554</b>   | <b>\$674,685</b>   |
| Dormant Members                          | 1,987,643          | 2,126,113          |
| Retired Members and Beneficiaries        | 4,721,791          | 4,472,184          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$7,431,988</b> | <b>\$7,272,982</b> |

#### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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

|                             | Before<br>Changes | After<br>Changes | Net<br>Change |
|-----------------------------|-------------------|------------------|---------------|
| Actuarial Accrued Liability | \$7,431,988       | \$7,431,988      | \$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  | \$7,431,988       | \$7,272,982       |
| 2. Actuarial value of assets  | 6,891,294         | 6,371,793         |
| 3. Unfunded accrued liability (1. – 2.)                                       | 540,694           | 901,189           |
| 4. Funded percentage (2. ÷ 1.)  | 93%               | 88%               |
| 5. Combined valuation payroll   | \$493,641         | \$502,227         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 110%              | 179%              |

#### 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<br>December 31, 2016 | Payment    | Interest   | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|------------|------------|--------------------------|------------------------|
| December 31, 2013 | (\$467,055)              | (\$37,015) | (\$32,207) | (\$462,247)              | (\$38,310)             |
| December 31, 2015 | \$1,235,227              | \$90,387   | \$85,467   | \$1,230,307              | \$93,552               |
| December 31, 2017 | N/A                      | N/A        | N/A        | (\$227,366)              | (\$16,054)             |
| <b>Total</b>      |                          |            |            | <b>\$540,694</b>         | <b>\$39,188</b>        |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$7,272,982      |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 13,268           |
| c. Benefit payments during 2017  | (385,313)        |
| d. Interest at 7.20% to December 31, 2017  | 510,261          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 7,411,198        |
| 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.)               | 7,411,198        |
| 2. Actuarial accrued liability at December 31, 2017                                  | 7,431,988        |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (20,790)         |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 6,371,793        |
| b. Contributions for 2017 <sup>1</sup>   | (14,908)         |
| c. Benefit payments and expenses during 2017   | (388,308)        |
| d. Interest at 7.20% to December 31, 2017  | 444,253          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 6,412,830        |
| 5. Actuarial value of assets at December 31, 2017                                    | 6,891,294        |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 478,464          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$457,674</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$901,189</b> |
| 2. Expected increase  | 97,179           |
| 3. Liability (gain)/loss  | 20,790           |
| 4. Asset (gain)/loss  | (478,464)        |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$540,694</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 14,528            | 102,612                                  | 14.16%           | 14,022            | 100,232                                  | 13.99%           |
| <b>Total</b>           | <b>\$14,528</b>   | <b>\$102,612</b>                         | <b>14.16%</b>    | <b>\$14,022</b>   | <b>\$100,232</b>                         | <b>13.99%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$540,694         | \$901,189         |
| 2. Next year's Tier 1/Tier 2 UAL payment | 39,188            | 62,764            |
| 3. Combined valuation payroll            | 493,641           | 502,227           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 7.94%             | 12.50%            |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 14.16%   | 13.99%  |
| b. Tier 1/Tier 2 UAL rate                             | 7.94%  | 12.50%  |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 22.25%   | 26.63%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |          |
|--|--------------------------|----------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 8.75%    |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%    |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 8.75%    |
| 4. Size of rate collar   |                          |          |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 1.75%    |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%    |
| c. Funded percentage   |                          | 93%      |
| 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.) |                          | 3.00%    |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 5.75%    |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 11.75%   |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 22.25%   |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (10.50%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 7.94%    |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | (2.56%)  |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 11.75%   |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%    |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%    |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 14.16%   |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 14.16%   |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 11.75%   |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 14.16%   | 13.99%  |
| b. Tier 1/Tier 2 UAL rate  | (2.56%)  | (2.38%)   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 11.75%   | 11.75%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$0              | \$0           | \$0              |
| Tier 2                            | 102,612          | 0             | 102,612          |
| Tier 1/Tier 2 valuation payroll   | 102,612          | 0             | 102,612          |
| OPSRP valuation payroll           | 391,029          | 0             | 391,029          |
| <b>Combined valuation payroll</b> | <b>\$493,641</b> | <b>\$0</b>    | <b>\$493,641</b> |

### *Employer Member Census*

|  | December 31 |           |           |           |           |           |           |           |
|--|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|  | 2017        |           |           |           | 2016      |           |           |           |
|  | Tier 1      | Tier 2    | OPSRP     | Total     | Tier 1    | Tier 2    | OPSRP     | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |           |           |           |           |           |           |           |
| General Service  | 0           | 2         | 17        | 19        | 0         | 2         | 12        | 14        |
| Police & Fire  | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Total  | 0           | 2         | 17        | 19        | 0         | 2         | 12        | 14        |
| <b>Active Members with previous service segments with the employer</b> |             |           |           |           |           |           |           |           |
| General Service  | 2           | 1         | N/A       | 3         | 2         | 1         | N/A       | 3         |
| Police & Fire  | 0           | 0         | N/A       | 0         | 0         | 0         | N/A       | 0         |
| Total  | 2           | 1         | N/A       | 3         | 2         | 1         | N/A       | 3         |
| <b>Dormant Members</b>   |             |           |           |           |           |           |           |           |
| General Service  | 8           | 4         | 2         | 14        | 9         | 4         | 2         | 15        |
| Police & Fire  | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Total  | 8           | 4         | 2         | 14        | 9         | 4         | 2         | 15        |
| <b>Retired Members and Beneficiaries</b>                               |             |           |           |           |           |           |           |           |
| General Service  | 26          | 5         | 2         | 33        | 28        | 5         | 2         | 35        |
| Police & Fire  | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Total  | 26          | 5         | 2         | 33        | 28        | 5         | 2         | 35        |
| <b>Grand Total Number of Members</b>                                   | <b>36</b>   | <b>12</b> | <b>21</b> | <b>69</b> | <b>39</b> | <b>12</b> | <b>16</b> | <b>67</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |           |                                  | 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                             | 1         | 1,882                   |
| 35-39           |           |                                  | 60-64                             | 5         | 2,007                   |
| 40-44           | 1         | 680                              | 65-69                             | 7         | 1,217                   |
| 45-49           |           |                                  | 70-74                             | 4         | 365                     |
| 50-54           | 4         | 2,178                            | 75-79                             | 6         | 603                     |
| 55-59           | 2         | 1,433                            | 80-84                             | 5         | 665                     |
| 60-64           | 1         | 2,280                            | 85-89                             | 3         | 198                     |
| 65-69           | 1         | 696                              | 90-94                             |           |                         |
| 70-74           | 2         | 164                              | 95-99                             |           |                         |
| 75+             | 1         | 13                               | 100+                              |           |                         |
| <b>Total</b>    | <b>12</b> | <b>1,298</b>                     | <b>Total</b>                      | <b>31</b> | <b>950</b>              |

## 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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October 2018

Port of Hood River/2788  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
Port of Hood River/2788

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.



October 2018  
Port of Hood River/2788

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**

**INDEPENDENT EMPLOYERS**

**Port of Hood River -- #2788**

**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 Port of Hood River to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Port of Hood River.

### Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

#### *Employer Rates Effective July 1, 2019 for Port of Hood River*

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 13.45%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 4.17%         | 4.17%           | 4.17%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>19.07%</b> | <b>14.02%</b>   | <b>18.65%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>19.13%</b> | <b>14.02%</b>   | <b>18.65%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 74%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 17.62%             | 17.62%                        |
| Minimum 2021-2023 Rate                                       | 14.10%             | 10.58%                        |
| Maximum 2021-2023 Rate                                       | 21.14%             | 24.66%                        |

# 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               | \$2,009,040                   | \$2,223,288                           | \$214,248            | 90%                  | \$1,003,206         | 21%   |
| 12/31/2013               | 2,341,088                     | 2,399,064                             | 57,976               | 98%                  | 1,035,612           | 6%  |
| 12/31/2014               | 2,370,756                     | 2,932,042                             | 561,286              | 81%                  | 1,045,521           | 54%   |
| 12/31/2015               | 2,413,916                     | 3,122,338                             | 708,422              | 77%                  | 1,165,124           | 61%   |
| 12/31/2016               | 2,537,268                     | 3,426,722                             | 889,454              | 74%                  | 1,308,475           | 68%   |
| 12/31/2017               | 2,741,401                     | 3,692,778                             | 951,377              | 74%                  | 1,189,971           | 80%   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### *Port of Hood River*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$951,377                 | \$889,454         |
| Allocated pooled OPSRP UAL                       | 179,318                   | 225,270           |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 1,130,695                 | 1,114,724         |
| Combined valuation payroll                       | 1,189,971                 | 1,308,475         |
| Net pension UAL as a percentage of payroll       | 95%                       | 85%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$13,635)                | (\$178)           |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$72,306                  | \$91,328          |
| Tier 1/Tier 2 valuation payroll                                  | 537,434                   | 684,462           |
| Tier 1/Tier 2 pension normal cost rate                           | 13.45%                    | 13.34%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$3,692,778               | \$3,426,722       |
| Actuarial asset value  | 2,741,401                 | 2,537,268         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 951,377                   | 889,454           |
| Tier 1/ Tier 2 Funded status                                     | 74%                       | 74%               |
| Combined valuation payroll                                       | \$1,189,971               | \$1,308,475       |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 80%                       | 68%               |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 4.17%                     | 4.28%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 8                         | 11                |
| Tier 1/Tier 2 dormant members                                    | 4                         | 6                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 16                        | 11                |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 1,189,971         | 1,308,475         |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$301,283          | \$318,486          |
| 2. Employer reserves                                  | 1,675,183          | 1,721,393          |
| 3. Benefits in force reserve                          | 764,935            | 497,389            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$2,741,401</b> | <b>\$2,537,268</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$2,537,268                               |
| 2. Regular employer contributions   | 88,733                                    |
| 3. Benefit payments and expenses  | (142,488)                                 |
| 4. Adjustments <sup>1</sup>   | (133,151)                                 |
| 5. Interest credited  | 391,040                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$2,741,401</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 25,237            | 23,452            |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 47,069            | 67,876            |
| <b>Total</b>           | <b>\$72,306</b>   | <b>\$91,328</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$72,306       | \$72,306      | \$0        |



## Tier 1/Tier 2 Valuation Results

### Liabilities

#### ***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.

#### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017  | December 31, 2016  |
|--|--------------------|--------------------|
| Active Members                           |                    |                    |
| ▪ Tier 1 Police & Fire                   | \$0                | \$0                |
| ▪ Tier 1 General Service                 | 891,214            | 815,457            |
| ▪ Tier 2 Police & Fire                   | 0                  | 0                  |
| ▪ Tier 2 General Service                 | 745,323            | 1,125,892          |
| ▪ <b>Total Active Members</b>            | <b>\$1,636,537</b> | <b>\$1,941,349</b> |
| Dormant Members                          | 323,593            | 310,716            |
| Retired Members and Beneficiaries        | 1,732,648          | 1,174,657          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$3,692,778</b> | <b>\$3,426,722</b> |

#### ***Change in Tier 1/Tier 2 Actuarial Accrued Liability***

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

|                             | Before<br>Changes | After<br>Changes | Net<br>Change |
|-----------------------------|-------------------|------------------|---------------|
| Actuarial Accrued Liability | \$3,692,778       | \$3,692,778      | \$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  | \$3,692,778       | \$3,426,722       |
| 2. Actuarial value of assets  | 2,741,401         | 2,537,268         |
| 3. Unfunded accrued liability (1. – 2.)                                       | 951,377           | 889,454           |
| 4. Funded percentage (2. ÷ 1.)  | 74%               | 74%               |
| 5. Combined valuation payroll   | \$1,189,971       | \$1,308,475       |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 80%               | 68%               |

#### 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<br>December 31, 2016 | Payment  | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|----------|----------|--------------------------|------------------------|
| December 31, 2013 | \$57,593                 | \$4,564  | \$3,972  | \$57,001                 | \$4,724                |
| December 31, 2015 | \$650,327                | \$47,587 | \$44,997 | \$647,737                | \$49,254               |
| December 31, 2017 | N/A                      | N/A      | N/A      | \$246,639                | \$17,414               |
| <b>Total</b>      |                          |          |          | <b>\$951,377</b>         | <b>\$71,392</b>        |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$3,426,722  |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 86,417       |
| c. Benefit payments during 2017  | (141,389)    |
| d. Interest at 7.20% to December 31, 2017  | 244,745      |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 3,616,495    |
| 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.)               | 3,616,495    |
| 2. Actuarial accrued liability at December 31, 2017                                  | 3,692,778    |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (76,283)     |
| 4. Expected actuarial value of assets  |              |
| a. Actuarial value of assets at December 31, 2016                                    | 2,537,268    |
| b. Contributions for 2017 <sup>1</sup>   | 88,733       |
| c. Benefit payments and expenses during 2017   | (142,488)    |
| d. Interest at 7.20% to December 31, 2017  | 180,748      |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 2,664,260    |
| 5. Actuarial value of assets at December 31, 2017                                    | 2,741,401    |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 77,141       |
| 7. Total actuarial gain/(loss) (3. + 6.)   | <b>\$858</b> |

### **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   | <b>\$889,454</b> |
| 2. Expected increase  | 62,781           |
| 3. Liability (gain)/loss  | 76,283           |
| 4. Asset (gain)/loss  | (77,141)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| 6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)                  | <b>\$951,377</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 25,237            | 194,461                                  | 12.98%           | 23,452            | 183,153                                  | 12.80%           |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 47,069            | 342,973                                  | 13.72%           | 67,876            | 501,309                                  | 13.54%           |
| <b>Total</b>           | <b>\$72,306</b>   | <b>\$537,434</b>                         | <b>13.45%</b>    | <b>\$91,328</b>   | <b>\$684,462</b>                         | <b>13.34%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$951,377         | \$889,454         |
| 2. Next year's Tier 1/Tier 2 UAL payment | 71,392            | 64,968            |
| 3. Combined valuation payroll            | 1,189,971         | 1,308,475         |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 6.00%             | 4.97%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 13.45%   | 13.34%  |
| b. Tier 1/Tier 2 UAL rate                             | 6.00%  | 4.97%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 19.60%   | 18.45%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 14.62%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 14.62%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 2.92%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%   |
| c. Funded percentage   |                          | 74%     |
| 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.) |                          | 3.00%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 11.62%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 17.62%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 19.60%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (1.98%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 6.00%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 4.02%   |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 17.62%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 13.45%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 13.45%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 17.62%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 13.45%   | 13.34%  |
| b. Tier 1/Tier 2 UAL rate  | 4.02%  | 4.14%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 17.62%   | 17.62%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service    | Police & Fire | Total              |
|-----------------------------------|--------------------|---------------|--------------------|
| Tier 1                            | \$194,461          | \$0           | \$194,461          |
| Tier 2                            | 342,973            | 0             | 342,973            |
| Tier 1/Tier 2 valuation payroll   | 537,434            | 0             | 537,434            |
| OPSRP valuation payroll           | 652,537            | 0             | 652,537            |
| <b>Combined valuation payroll</b> | <b>\$1,189,971</b> | <b>\$0</b>    | <b>\$1,189,971</b> |

### *Employer Member Census*

|  | December 31 |           |           |           |           |           |           |           |
|--|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|  | 2017        |           |           |           | 2016      |           |           |           |
|  | Tier 1      | Tier 2    | OPSRP     | Total     | Tier 1    | Tier 2    | OPSRP     | Total     |
| <b>Active Members</b> <sup>1</sup>                                     |             |           |           |           |           |           |           |           |
| General Service  | 2           | 6         | 19        | 27        | 2         | 9         | 17        | 28        |
| Police & Fire  | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Total  | 2           | 6         | 19        | 27        | 2         | 9         | 17        | 28        |
| <b>Active Members with previous service segments with the employer</b> |             |           |           |           |           |           |           |           |
| General Service  | 2           | 1         | N/A       | 3         | 2         | 1         | N/A       | 3         |
| Police & Fire  | 0           | 0         | N/A       | 0         | 0         | 0         | N/A       | 0         |
| Total  | 2           | 1         | N/A       | 3         | 2         | 1         | N/A       | 3         |
| <b>Dormant Members</b>   |             |           |           |           |           |           |           |           |
| General Service  | 1           | 3         | 1         | 5         | 2         | 4         | 1         | 7         |
| Police & Fire  | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Total  | 1           | 3         | 1         | 5         | 2         | 4         | 1         | 7         |
| <b>Retired Members and Beneficiaries</b>                               |             |           |           |           |           |           |           |           |
| General Service  | 11          | 5         | 0         | 16        | 9         | 2         | 0         | 11        |
| Police & Fire  | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Total  | 11          | 5         | 0         | 16        | 9         | 2         | 0         | 11        |
| <b>Grand Total Number of Members</b>                                   | <b>16</b>   | <b>15</b> | <b>20</b> | <b>51</b> | <b>15</b> | <b>16</b> | <b>18</b> | <b>49</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          | 1        |          |          |          |          | 1        |
| 45-49        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 50-54        |                  |          |          | 2        |          |          |          |          |          | 2        |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          | 1        |          |          | 1        |          |          |          | 2        |
| 65-69        |                  |          | 2        |          |          |          |          |          |          | 2        |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>3</b> | <b>3</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>8</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             | 1         | 146                     |
| 30-34           |          |                                  | 55-59                             |           |                         |
| 35-39           |          |                                  | 60-64                             | 6         | 1,045                   |
| 40-44           |          |                                  | 65-69                             | 3         | 451                     |
| 45-49           |          |                                  | 70-74                             | 1         | 310                     |
| 50-54           |          |                                  | 75-79                             | 3         | 742                     |
| 55-59           | 2        | 780                              | 80-84                             | 1         | 232                     |
| 60-64           | 1        | 473                              | 85-89                             | 1         | 598                     |
| 65-69           |          |                                  | 90-94                             |           |                         |
| 70-74           |          |                                  | 95-99                             |           |                         |
| 75+             | 1        | 290                              | 100+                              |           |                         |
| <b>Total</b>    | <b>4</b> | <b>581</b>                       | <b>Total</b>                      | <b>16</b> | <b>696</b>              |

# 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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October 2018

Port of St Helens/2570  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
Port of St Helens/2570

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.



October 2018  
Port of St Helens/2570

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**

**INDEPENDENT EMPLOYERS**

**Port of St Helens -- #2570**

**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 Port of St Helens to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Port of St Helens.

### Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

#### ***Employer Rates Effective July 1, 2019 for Port of St Helens***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 11.30%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | (1.47%)       | (1.47%)         | (1.47%)       |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>11.28%</b> | <b>8.38%</b>    | <b>13.01%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>11.34%</b> | <b>8.38%</b>    | <b>13.01%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 107%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 9.83%              | 9.83%                         |
| Minimum 2021-2023 Rate                                       | 6.83%              | 3.83%                         |
| Maximum 2021-2023 Rate                                       | 12.83%             | 15.83%                        |

# 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               | \$1,808,628                   | \$1,712,608                           | (\$96,020)           | 106%                 | \$737,966           | (13%)   |
| 12/31/2013               | 1,971,697                     | 1,758,059                             | (213,638)            | 112%                 | 740,374             | (29%)   |
| 12/31/2014               | 2,023,680                     | 2,101,780                             | 78,100               | 96%                  | 781,936             | 10%   |
| 12/31/2015               | 2,008,811                     | 2,005,253                             | (3,558)              | 100%                 | 869,839             | 0%  |
| 12/31/2016               | 2,051,472                     | 2,065,051                             | 13,579               | 99%                  | 838,308             | 2%  |
| 12/31/2017               | 2,320,581                     | 2,159,686                             | (160,895)            | 107%                 | 789,073             | (20%)   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### *Port of St Helens*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | (\$160,895)               | \$13,579          |
| Allocated pooled OPSRP UAL                       | 118,906                   | 144,325           |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | (41,989)                  | 157,904           |
| Combined valuation payroll                       | 789,073                   | 838,308           |
| Net pension UAL as a percentage of payroll       | (5%)                      | 19%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$9,041)                 | (\$114)           |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$14,270                  | \$12,727          |
| Tier 1/Tier 2 valuation payroll                                  | 126,274                   | 111,871           |
| Tier 1/Tier 2 pension normal cost rate                           | 11.30%                    | 11.38%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$2,159,686               | \$2,065,051       |
| Actuarial asset value  | 2,320,581                 | 2,051,472         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | (160,895)                 | 13,579            |
| Tier 1/ Tier 2 Funded status                                     | 107%                      | 99%               |
| Combined valuation payroll                                       | \$789,073                 | \$838,308         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | (20%)                     | 2%                |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | (1.47%)                   | 0.10%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 1                         | 1                 |
| Tier 1/Tier 2 dormant members                                    | 3                         | 4                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 4                         | 4                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 789,073           | 838,308           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

## Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$226,328          | \$188,579          |
| 2. Employer reserves                                  | 1,535,572          | 1,325,480          |
| 3. Benefits in force reserve                          | 558,681            | 537,413            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$2,320,581</b> | <b>\$2,051,472</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$2,051,472                               |
| 2. Regular employer contributions   | 5,516                                     |
| 3. Benefit payments and expenses  | (104,069)                                 |
| 4. Adjustments <sup>1</sup>   | 59,390                                    |
| 5. Interest credited  | 308,272                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$2,320,581</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 0                 | 0                 |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 14,270            | 12,727            |
| <b>Total</b>           | <b>\$14,270</b>   | <b>\$12,727</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$14,270       | \$14,270      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017  | December 31, 2016  |
|--|--------------------|--------------------|
| Active Members                           |                    |                    |
| ▪ Tier 1 Police & Fire                   | \$0                | \$0                |
| ▪ Tier 1 General Service                 | 156,056            | 132,325            |
| ▪ Tier 2 Police & Fire                   | 0                  | 0                  |
| ▪ Tier 2 General Service                 | 411,952            | 362,148            |
| ▪ <b>Total Active Members</b>            | <b>\$568,008</b>   | <b>\$494,473</b>   |
| Dormant Members                          | 326,212            | 301,397            |
| Retired Members and Beneficiaries        | 1,265,466          | 1,269,181          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$2,159,686</b> | <b>\$2,065,051</b> |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$2,159,686    | \$2,159,686   | \$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  | \$2,159,686       | \$2,065,051       |
| 2. Actuarial value of assets  | 2,320,581         | 2,051,472         |
| 3. Unfunded accrued liability (1. – 2.)                                       | (160,895)         | 13,579            |
| 4. Funded percentage (2. ÷ 1.)  | 107%              | 99%               |
| 5. Combined valuation payroll   | \$789,073         | \$838,308         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | (20%)             | 2%                |

#### 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<br>December 31, 2016 | Payment    | Interest   | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|------------|------------|--------------------------|------------------------|
| December 31, 2013 | (\$212,222)              | (\$16,819) | (\$14,635) | (\$210,038)              | (\$17,407)             |
| December 31, 2015 | \$209,863                | \$15,357   | \$14,521   | \$209,027                | \$15,894               |
| December 31, 2017 | N/A                      | N/A        | N/A        | (\$159,884)              | (\$11,289)             |
| <b>Total</b>      |                          |            |            | <b>(\$160,895)</b>       | <b>(\$12,802)</b>      |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$2,065,051      |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 12,043           |
| c. Benefit payments during 2017  | (103,266)        |
| d. Interest at 7.20% to December 31, 2017  | 145,400          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 2,119,228        |
| 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.)               | 2,119,228        |
| 2. Actuarial accrued liability at December 31, 2017                                  | 2,159,686        |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (40,458)         |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 2,051,472        |
| b. Contributions for 2017 <sup>1</sup>   | 5,516            |
| c. Benefit payments and expenses during 2017   | (104,069)        |
| d. Interest at 7.20% to December 31, 2017  | 144,158          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 2,097,077        |
| 5. Actuarial value of assets at December 31, 2017                                    | 2,320,581        |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 223,504          |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$183,046</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                    |
|---|--------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$13,579</b>    |
| 2. Expected increase  | 8,572              |
| 3. Liability (gain)/loss  | 40,458             |
| 4. Asset (gain)/loss  | (223,504)          |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                  |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>(\$160,895)</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017 |   |                        | December 31, 2016 |   |                        |
|------------------------|-------------------|---|------------------------|-------------------|---|------------------------|
|                        | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$0               | \$0   | 0.00%                  | \$0               | \$0   | 0.00%                  |
| Tier 1 General Service | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 Police & Fire   | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 General Service | 14,270            | 126,274   | 11.30%                 | 12,727            | 111,871   | 11.38%                 |
| <b>Total</b>           | <b>\$14,270</b>   | <b>\$126,274</b>                                  | <b>11.30%</b>          | <b>\$12,727</b>   | <b>\$111,871</b>                                  | <b>11.38%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | (\$160,895)       | \$13,579          |
| 2. Next year's Tier 1/Tier 2 UAL payment | (12,802)          | (337)             |
| 3. Combined valuation payroll            | 789,073           | 838,308           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | (1.62%)           | (0.04%)           |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 11.30%   | 11.38%  |
| b. Tier 1/Tier 2 UAL rate                             | (1.62%)  | (0.04%)   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 9.83%  | 11.48%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 10.99%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 10.99%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 2.20%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%   |
| c. Funded percentage   |                          | 107%    |
| 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.) |                          | 3.00%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 7.99%   |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 13.99%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 9.83%   |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%   |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | (1.62%) |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | (1.62%) |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 9.83%   |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 11.30%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 11.30%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 9.83%   |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 11.30%   | 11.38%  |
| b. Tier 1/Tier 2 UAL rate  | (1.62%)  | (0.04%)   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 9.83%  | 11.48%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$0              | \$0           | \$0              |
| Tier 2                            | 126,274          | 0             | 126,274          |
| Tier 1/Tier 2 valuation payroll   | 126,274          | 0             | 126,274          |
| OPSRP valuation payroll           | 662,799          | 0             | 662,799          |
| <b>Combined valuation payroll</b> | <b>\$789,073</b> | <b>\$0</b>    | <b>\$789,073</b> |

### *Employer Member Census*

|  | December 31 |          |           |           |          |          |           |           |
|--|-------------|----------|-----------|-----------|----------|----------|-----------|-----------|
|  | 2017        |          |           |           | 2016     |          |           |           |
|  | Tier 1      | Tier 2   | OPSRP     | Total     | Tier 1   | Tier 2   | OPSRP     | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |          |           |           |          |          |           |           |
| General Service  | 0           | 1        | 12        | 13        | 0        | 1        | 11        | 12        |
| Police & Fire  | 0           | 0        | 0         | 0         | 0        | 0        | 0         | 0         |
| Total  | 0           | 1        | 12        | 13        | 0        | 1        | 11        | 12        |
| <b>Active Members with previous service segments with the employer</b> |             |          |           |           |          |          |           |           |
| General Service  | 1           | 2        | N/A       | 3         | 1        | 1        | N/A       | 2         |
| Police & Fire  | 0           | 0        | N/A       | 0         | 0        | 0        | N/A       | 0         |
| Total  | 1           | 2        | N/A       | 3         | 1        | 1        | N/A       | 2         |
| <b>Dormant Members</b>   |             |          |           |           |          |          |           |           |
| General Service  | 0           | 3        | 1         | 4         | 0        | 4        | 0         | 4         |
| Police & Fire  | 0           | 0        | 0         | 0         | 0        | 0        | 0         | 0         |
| Total  | 0           | 3        | 1         | 4         | 0        | 4        | 0         | 4         |
| <b>Retired Members and Beneficiaries</b>                               |             |          |           |           |          |          |           |           |
| General Service  | 3           | 1        | 1         | 5         | 3        | 1        | 1         | 5         |
| Police & Fire  | 0           | 0        | 0         | 0         | 0        | 0        | 0         | 0         |
| Total  | 3           | 1        | 1         | 5         | 3        | 1        | 1         | 5         |
| <b>Grand Total Number of Members</b>                                   | <b>4</b>    | <b>7</b> | <b>14</b> | <b>25</b> | <b>4</b> | <b>7</b> | <b>12</b> | <b>23</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          | 1        |          |          |          |          |          |          | 1        |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             |          |                         |
| 35-39           |          |                                  | 60-64                             |          |                         |
| 40-44           |          |                                  | 65-69                             | 1        | 6,018                   |
| 45-49           |          |                                  | 70-74                             |          |                         |
| 50-54           |          |                                  | 75-79                             | 1        | 1,827                   |
| 55-59           | 2        | 739                              | 80-84                             |          |                         |
| 60-64           | 1        | 634                              | 85-89                             | 2        | 486                     |
| 65-69           |          |                                  | 90-94                             |          |                         |
| 70-74           |          |                                  | 95-99                             |          |                         |
| 75+             |          |                                  | 100+                              |          |                         |
| <b>Total</b>    | <b>3</b> | <b>704</b>                       | <b>Total</b>                      | <b>4</b> | <b>2,204</b>            |

## 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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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.



October 2018

Port of Umatilla/2581  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).

October 2018  
Port of Umatilla/2581

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.



October 2018  
Port of Umatilla/2581

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**

**INDEPENDENT EMPLOYERS**

**Port of Umatilla -- #2581**

**October 2018**

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## Executive Summary

Milliman has prepared this report for Port of Umatilla to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Port of Umatilla.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Port of Umatilla***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 25.17%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | (0.75%)       | (0.75%)         | (0.75%)       |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>25.87%</b> | <b>9.10%</b>    | <b>13.73%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>25.93%</b> | <b>9.10%</b>    | <b>13.73%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 78%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 24.42%             | 24.42%                        |
| Minimum 2021-2023 Rate                                       | 19.54%             | 14.66%                        |
| Maximum 2021-2023 Rate                                       | 29.30%             | 34.18%                        |

# 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               | \$1,466,216                   | \$1,609,488                           | \$143,272            | 91%                  | \$155,036           | 92%   |
| 12/31/2013               | 1,478,945                     | 1,673,028                             | 194,083              | 88%                  | 152,543             | 127%  |
| 12/31/2014               | 1,514,304                     | 1,936,061                             | 421,757              | 78%                  | 147,945             | 285%  |
| 12/31/2015               | 1,486,213                     | 1,953,811                             | 467,598              | 76%                  | 149,789             | 312%  |
| 12/31/2016               | 1,539,275                     | 2,066,158                             | 526,883              | 75%                  | 151,436             | 348%  |
| 12/31/2017               | 1,732,025                     | 2,213,777                             | 481,752              | 78%                  | 157,607             | 306%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) under GASB 75 will be provided separately and is not included in this report.

# Executive Summary

## Principal Valuation Results

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

### ***Port of Umatilla***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$481,752                 | \$526,883         |
| Allocated pooled OPSRP UAL                       | 23,750                    | 26,072            |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 505,502                   | 552,955           |
| Combined valuation payroll                       | 157,607                   | 151,436           |
| Net pension UAL as a percentage of payroll       | 321%                      | 365%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$1,806)                 | (\$21)            |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$39,664                  | \$31,868          |
| Tier 1/Tier 2 valuation payroll                                  | 157,607                   | 151,436           |
| Tier 1/Tier 2 pension normal cost rate                           | 25.17%                    | 21.04%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$2,213,777               | \$2,066,158       |
| Actuarial asset value  | 1,732,025                 | 1,539,275         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 481,752                   | 526,883           |
| Tier 1/ Tier 2 Funded status                                     | 78%                       | 75%               |
| Combined valuation payroll                                       | \$157,607                 | \$151,436         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 306%                      | 348%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | (0.75%)                   | 3.38%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 1                         | 1                 |
| Tier 1/Tier 2 dormant members                                    | 0                         | 0                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 3                         | 3                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 157,607           | 151,436           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$205,711          | \$190,459          |
| 2. Employer reserves                                  | 929,470            | 777,322            |
| 3. Benefits in force reserve                          | 596,844            | 571,494            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$1,732,025</b> | <b>\$1,539,275</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$1,539,275                               |
| 2. Regular employer contributions   | 27,901                                    |
| 3. Benefit payments and expenses  | (111,178)                                 |
| 4. Adjustments <sup>1</sup>   | 59,328                                    |
| 5. Interest credited  | 216,698                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$1,732,025</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification*

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 39,664            | 31,868            |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 0                 | 0                 |
| <b>Total</b>           | <b>\$39,664</b>   | <b>\$31,868</b>   |

### *Change in Tier 1/Tier 2 Normal Cost*

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$39,664       | \$39,664      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017  | December 31, 2016  |
|--|--------------------|--------------------|
| Active Members                           |                    |                    |
| ▪ Tier 1 Police & Fire                   | \$0                | \$0                |
| ▪ Tier 1 General Service                 | 861,868            | 716,488            |
| ▪ Tier 2 Police & Fire                   | 0                  | 0                  |
| ▪ Tier 2 General Service                 | 0                  | 0                  |
| ▪ <b>Total Active Members</b>            | <b>\$861,868</b>   | <b>\$716,488</b>   |
| Dormant Members                          | 0                  | 0                  |
| Retired Members and Beneficiaries        | 1,351,909          | 1,349,670          |
| <b>Total Actuarial Accrued Liability</b> | <b>\$2,213,777</b> | <b>\$2,066,158</b> |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$2,213,777    | \$2,213,777   | \$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  | \$2,213,777       | \$2,066,158       |
| 2. Actuarial value of assets  | 1,732,025         | 1,539,275         |
| 3. Unfunded accrued liability (1. – 2.)                                       | 481,752           | 526,883           |
| 4. Funded percentage (2. ÷ 1.)  | 78%               | 75%               |
| 5. Combined valuation payroll   | \$157,607         | \$151,436         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 306%              | 348%              |

#### 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<br>December 31, 2016 | Payment  | Interest | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|----------|----------|--------------------------|------------------------|
| December 31, 2013 | \$192,797                | \$15,280 | \$13,295 | \$190,812                | \$15,814               |
| December 31, 2015 | \$273,597                | \$20,020 | \$18,931 | \$272,508                | \$20,721               |
| December 31, 2017 | N/A                      | N/A      | N/A      | \$18,432                 | \$1,301                |
| <b>Total</b>      |                          |          |          | <b>\$481,752</b>         | <b>\$37,836</b>        |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### *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                                  | \$2,066,158     |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 30,154          |
| c. Benefit payments during 2017  | (110,320)       |
| d. Interest at 7.20% to December 31, 2017  | 145,877         |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 2,131,869       |
| 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.)               | 2,131,869       |
| 2. Actuarial accrued liability at December 31, 2017                                  | 2,213,777       |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (81,908)        |
| 4. Expected actuarial value of assets  |                 |
| a. Actuarial value of assets at December 31, 2016                                    | 1,539,275       |
| b. Contributions for 2017 <sup>1</sup>   | 27,901          |
| c. Benefit payments and expenses during 2017   | (111,178)       |
| d. Interest at 7.20% to December 31, 2017  | 107,830         |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 1,563,829       |
| 5. Actuarial value of assets at December 31, 2017                                    | 1,732,025       |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 168,196         |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$86,288</b> |

### *Unfunded Accrued Liability Reconciliation*

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$526,883</b> |
| 2. Expected increase  | 41,157           |
| 3. Liability (gain)/loss  | 81,908           |
| 4. Asset (gain)/loss  | (168,196)        |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$481,752</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 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 |
| Tier 1 Police & Fire   | \$0               | \$0                                      | 0.00%            | \$0               | \$0                                      | 0.00%            |
| Tier 1 General Service | 39,664            | 157,607                                  | 25.17%           | 31,868            | 151,436                                  | 21.04%           |
| Tier 2 Police & Fire   | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| Tier 2 General Service | 0                 | 0  | 0.00%            | 0                 | 0  | 0.00%            |
| <b>Total</b>           | <b>\$39,664</b>   | <b>\$157,607</b>                         | <b>25.17%</b>    | <b>\$31,868</b>   | <b>\$151,436</b>                         | <b>21.04%</b>    |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$481,752         | \$526,883         |
| 2. Next year's Tier 1/Tier 2 UAL payment | 37,836            | 39,571            |
| 3. Combined valuation payroll            | 157,607           | 151,436           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 24.01%            | 26.13%            |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 25.17%   | 21.04%  |
| b. Tier 1/Tier 2 UAL rate                             | 24.01%   | 26.13%  |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 49.33%   | 47.31%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |          |
|--|--------------------------|----------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 20.35%   |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%    |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 20.35%   |
| 4. Size of rate collar   |                          |          |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 4.07%    |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 4.07%    |
| c. Funded percentage   |                          | 78%      |
| 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.) |                          | 4.07%    |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 16.28%   |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 24.42%   |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 49.33%   |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (24.91%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 24.01%   |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | (0.90%)  |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 24.42%   |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%    |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%    |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 25.17%   |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 25.17%   |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 24.42%   |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates        |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate | 25.17%   | 21.04%  |
| b. Tier 1/Tier 2 UAL rate                          | (0.90%)  | 3.24%   |
| c. Multnomah Fire District #10 rate                | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate                | 24.42%   | 24.42%  |
| <i>(a. + b. + c., minimum of 5.94%)</i>            |  |   |



# Data

## Demographic Information

### Employer Valuation Payroll

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$157,607        | \$0           | \$157,607        |
| Tier 2                            | 0                | 0             | 0                |
| Tier 1/Tier 2 valuation payroll   | 157,607          | 0             | 157,607          |
| OPSRP valuation payroll           | 0                | 0             | 0                |
| <b>Combined valuation payroll</b> | <b>\$157,607</b> | <b>\$0</b>    | <b>\$157,607</b> |

### Employer Member Census

|  | December 31 |          |          |          |          |          |          |          |
|--|-------------|----------|----------|----------|----------|----------|----------|----------|
|  | 2017        |          |          |          | 2016     |          |          |          |
|  | Tier 1      | Tier 2   | OPSRP    | Total    | Tier 1   | Tier 2   | OPSRP    | Total    |
| <b>Active Members <sup>1</sup></b>                                     |             |          |          |          |          |          |          |          |
| General Service  | 1           | 0        | 0        | 1        | 1        | 0        | 0        | 1        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 1           | 0        | 0        | 1        | 1        | 0        | 0        | 1        |
| <b>Active Members with previous service segments with the employer</b> |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Police & Fire  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| Total  | 0           | 0        | N/A      | 0        | 0        | 0        | N/A      | 0        |
| <b>Dormant Members</b>   |             |          |          |          |          |          |          |          |
| General Service  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Retired Members and Beneficiaries</b>                               |             |          |          |          |          |          |          |          |
| General Service  | 3           | 0        | 0        | 3        | 3        | 0        | 0        | 3        |
| Police & Fire  | 0           | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Total  | 3           | 0        | 0        | 3        | 3        | 0        | 0        | 3        |
| <b>Grand Total Number of Members</b>                                   | <b>4</b>    | <b>0</b> | <b>0</b> | <b>4</b> | <b>4</b> | <b>0</b> | <b>0</b> | <b>4</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          |          |          |          |          |          |
| 45-49        |                  |          |          |          |          |          |          |          |          |          |
| 50-54        |                  |          |          |          |          |          |          |          |          |          |
| 55-59        |                  |          |          |          |          |          |          |          |          |          |
| 60-64        |                  |          |          |          |          |          |          |          |          |          |
| 65-69        |                  |          |          |          | 1        |          |          |          |          | 1        |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |       |                                  | 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                             |          |                         |
| 35-39           |       |                                  | 60-64                             | 1        | 3,694                   |
| 40-44           |       |                                  | 65-69                             | 1        | 2,548                   |
| 45-49           |       |                                  | 70-74                             | 1        | 1,982                   |
| 50-54           |       |                                  | 75-79                             |          |                         |
| 55-59           |       |                                  | 80-84                             |          |                         |
| 60-64           |       |                                  | 85-89                             |          |                         |
| 65-69           |       |                                  | 90-94                             |          |                         |
| 70-74           |       |                                  | 95-99                             |          |                         |
| 75+             |       |                                  | 100+                              |          |                         |
| <b>Total</b>    |       |                                  | <b>Total</b>                      | <b>3</b> | <b>2,741</b>            |

## 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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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.



October 2018

Redmond Area Park & Recreation District/2689  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Redmond Area Park & Recreation District/2689

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.



October 2018  
Redmond Area Park & Recreation District/2689

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**

**INDEPENDENT EMPLOYERS**

**Redmond Area Park & Recreation District -- #2689**

**October 2018**

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## Executive Summary

Milliman has prepared this report for Redmond Area Park & Recreation District to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Redmond Area Park & Recreation District.

## Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

### ***Employer Rates Effective July 1, 2019 for Redmond Area Park & Recreation District***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 13.40%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 1.42%         | 1.42%           | 1.42%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>16.27%</b> | <b>11.27%</b>   | <b>15.90%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>16.33%</b> | <b>11.27%</b>   | <b>15.90%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 92%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 14.82%             | 14.82%                        |
| Minimum 2021-2023 Rate                                       | 11.82%             | 8.82%                         |
| Maximum 2021-2023 Rate                                       | 17.82%             | 20.82%                        |

# 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               | \$1,271,322                   | \$1,134,298                           | (\$137,024)          | 112%                 | \$766,663           | (18%)   |
| 12/31/2013               | 1,428,866                     | 1,179,561                             | (249,305)            | 121%                 | 719,810             | (35%)   |
| 12/31/2014               | 1,488,341                     | 1,421,829                             | (66,512)             | 105%                 | 739,768             | (9%)  |
| 12/31/2015               | 1,509,179                     | 1,555,618                             | 46,439               | 97%                  | 740,008             | 6%  |
| 12/31/2016               | 1,587,537                     | 1,695,818                             | 108,281              | 94%                  | 767,228             | 14%   |
| 12/31/2017               | 1,704,359                     | 1,849,558                             | 145,199              | 92%                  | 696,992             | 21%   |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Redmond Area Park & Recreation District***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$145,199                 | \$108,281         |
| Allocated pooled OPSRP UAL                       | 105,030                   | 132,088           |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 250,229                   | 240,369           |
| Combined valuation payroll                       | 696,992                   | 767,228           |
| Net pension UAL as a percentage of payroll       | 36%                       | 31%               |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$7,986)                 | (\$104)           |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$29,981                  | \$36,980          |
| Tier 1/Tier 2 valuation payroll                                  | 223,704                   | 266,439           |
| Tier 1/Tier 2 pension normal cost rate                           | 13.40%                    | 13.88%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$1,849,558               | \$1,695,818       |
| Actuarial asset value  | 1,704,359                 | 1,587,537         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 145,199                   | 108,281           |
| Tier 1/ Tier 2 Funded status                                     | 92%                       | 94%               |
| Combined valuation payroll                                       | \$696,992                 | \$767,228         |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 21%                       | 14%               |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 1.42%                     | 0.96%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 5                         | 6                 |
| Tier 1/Tier 2 dormant members                                    | 7                         | 7                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 10                        | 9                 |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 696,992           | 767,228           |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$337,657          | \$361,015          |
| 2. Employer reserves                                  | 1,094,441          | 1,049,994          |
| 3. Benefits in force reserve                          | 272,261            | 176,528            |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$1,704,359</b> | <b>\$1,587,537</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$1,587,537                               |
| 2. Regular employer contributions   | 12,477                                    |
| 3. Benefit payments and expenses  | (50,716)                                  |
| 4. Adjustments <sup>1</sup>   | (57,934)                                  |
| 5. Interest credited  | 212,994                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$1,704,359</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 10,399            | 17,492            |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 19,582            | 19,488            |
| <b>Total</b>           | <b>\$29,981</b>   | <b>\$36,980</b>   |

### Change in Tier 1/Tier 2 Normal Cost

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$29,981       | \$29,981      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017  | December 31, 2016  |
|--|--------------------|--------------------|
| Active Members                           |                    |                    |
| ▪ Tier 1 Police & Fire                   | \$0                | \$0                |
| ▪ Tier 1 General Service                 | 568,846            | 677,984            |
| ▪ Tier 2 Police & Fire                   | 0                  | 0                  |
| ▪ Tier 2 General Service                 | 462,375            | 423,326            |
| ▪ <b>Total Active Members</b>            | <b>\$1,031,221</b> | <b>\$1,101,310</b> |
| Dormant Members                          | 201,640            | 177,611            |
| Retired Members and Beneficiaries        | 616,697            | 416,897            |
| <b>Total Actuarial Accrued Liability</b> | <b>\$1,849,558</b> | <b>\$1,695,818</b> |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$1,849,558    | \$1,849,558   | \$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  | \$1,849,558       | \$1,695,818       |
| 2. Actuarial value of assets  | 1,704,359         | 1,587,537         |
| 3. Unfunded accrued liability (1. – 2.)                                       | 145,199           | 108,281           |
| 4. Funded percentage (2. ÷ 1.)  | 92%               | 94%               |
| 5. Combined valuation payroll   | \$696,992         | \$767,228         |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 21%               | 14%               |

### 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<br>December 31, 2016 | Payment    | Interest   | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|------------|------------|--------------------------|------------------------|
| December 31, 2013 | (\$247,653)              | (\$19,627) | (\$17,078) | (\$245,104)              | (\$20,314)             |
| December 31, 2015 | \$295,478                | \$21,621   | \$20,445   | \$294,302                | \$22,379               |
| December 31, 2017 | N/A                      | N/A        | N/A        | \$96,001                 | \$6,778                |
| <b>Total</b>      |                          |            |            | <b>\$145,199</b>         | <b>\$8,843</b>         |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### ***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                                  | \$1,695,818      |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 34,990           |
| c. Benefit payments during 2017  | (50,324)         |
| d. Interest at 7.20% to December 31, 2017  | 121,547          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 1,802,031        |
| 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.)               | 1,802,031        |
| 2. Actuarial accrued liability at December 31, 2017                                  | 1,849,558        |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | (47,527)         |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 1,587,537        |
| b. Contributions for 2017 <sup>1</sup>   | 12,477           |
| c. Benefit payments and expenses during 2017   | (50,716)         |
| d. Interest at 7.20% to December 31, 2017  | 112,926          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 1,662,225        |
| 5. Actuarial value of assets at December 31, 2017                                    | 1,704,359        |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | 42,134           |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>(\$5,393)</b> |

### ***Unfunded Accrued Liability Reconciliation***

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

|   |                  |
|---|------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$108,281</b> |
| 2. Expected increase  | 31,525           |
| 3. Liability (gain)/loss  | 47,527           |
| 4. Asset (gain)/loss  | (42,134)         |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$145,199</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017 |   |                        | December 31, 2016 |   |                        |
|------------------------|-------------------|---|------------------------|-------------------|---|------------------------|
|                        | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$0               | \$0   | 0.00%                  | \$0               | \$0   | 0.00%                  |
| Tier 1 General Service | 10,399            | 68,626  | 15.15%                 | 17,492            | 108,843   | 16.07%                 |
| Tier 2 Police & Fire   | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 General Service | 19,582            | 155,078   | 12.63%                 | 19,488            | 157,596   | 12.37%                 |
| <b>Total</b>           | <b>\$29,981</b>   | <b>\$223,704</b>                                  | <b>13.40%</b>          | <b>\$36,980</b>   | <b>\$266,439</b>                                  | <b>13.88%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$145,199         | \$108,281         |
| 2. Next year's Tier 1/Tier 2 UAL payment | 8,843             | 6,263             |
| 3. Combined valuation payroll            | 696,992           | 767,228           |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 1.27%             | 0.82%             |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 13.40%   | 13.88%  |
| b. Tier 1/Tier 2 UAL rate                             | 1.27%  | 0.82%   |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 14.82%   | 14.84%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |        |
|--|--------------------------|--------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 11.96% |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%  |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 11.96% |
| 4. Size of rate collar   |                          |        |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 2.39%  |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.00%  |
| c. Funded percentage   |                          | 92%    |
| 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.) |                          | 3.00%  |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 8.96%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 14.96% |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 14.82% |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | 0.00%  |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 1.27%  |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 1.27%  |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 14.82% |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%  |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%  |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 13.40% |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 13.40% |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 14.82% |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 13.40%   | 13.88%  |
| b. Tier 1/Tier 2 UAL rate  | 1.27%  | 0.82%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 14.82%   | 14.84%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service  | Police & Fire | Total            |
|-----------------------------------|------------------|---------------|------------------|
| Tier 1                            | \$68,626         | \$0           | \$68,626         |
| Tier 2                            | 155,078          | 0             | 155,078          |
| Tier 1/Tier 2 valuation payroll   | 223,704          | 0             | 223,704          |
| OPSRP valuation payroll           | 473,288          | 0             | 473,288          |
| <b>Combined valuation payroll</b> | <b>\$696,992</b> | <b>\$0</b>    | <b>\$696,992</b> |

### *Employer Member Census*

|  | December 31 |           |           |           |           |           |           |           |
|--|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|  | 2017        |           |           |           | 2016      |           |           |           |
|  | Tier 1      | Tier 2    | OPSRP     | Total     | Tier 1    | Tier 2    | OPSRP     | Total     |
| <b>Active Members</b> <sup>1</sup>                                     |             |           |           |           |           |           |           |           |
| General Service  | 1           | 4         | 30        | 35        | 2         | 4         | 29        | 35        |
| Police & Fire  | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Total  | 1           | 4         | 30        | 35        | 2         | 4         | 29        | 35        |
| <b>Active Members with previous service segments with the employer</b> |             |           |           |           |           |           |           |           |
| General Service  | 6           | 0         | N/A       | 6         | 6         | 1         | N/A       | 7         |
| Police & Fire  | 0           | 0         | N/A       | 0         | 0         | 0         | N/A       | 0         |
| Total  | 6           | 0         | N/A       | 6         | 6         | 1         | N/A       | 7         |
| <b>Dormant Members</b>   |             |           |           |           |           |           |           |           |
| General Service  | 2           | 5         | 7         | 14        | 3         | 4         | 4         | 11        |
| Police & Fire  | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Total  | 2           | 5         | 7         | 14        | 3         | 4         | 4         | 11        |
| <b>Retired Members and Beneficiaries</b>                               |             |           |           |           |           |           |           |           |
| General Service  | 9           | 1         | 0         | 10        | 8         | 1         | 0         | 9         |
| Police & Fire  | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Total  | 9           | 1         | 0         | 10        | 8         | 1         | 0         | 9         |
| <b>Grand Total Number of Members</b>                                   | <b>18</b>   | <b>10</b> | <b>37</b> | <b>65</b> | <b>19</b> | <b>10</b> | <b>33</b> | <b>62</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          |          |          | 1        |          |          |          | 1        |
| 45-49        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 50-54        |                  |          | 1        |          |          |          |          |          |          | 1        |
| 55-59        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 60-64        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>1</b> | <b>3</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>5</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             | 1         | 122                     |
| 35-39           |          |                                  | 60-64                             | 1         | 87                      |
| 40-44           | 2        | 48                               | 65-69                             | 5         | 624                     |
| 45-49           | 1        | 159                              | 70-74                             | 1         | 278                     |
| 50-54           | 1        | 854                              | 75-79                             | 1         | 328                     |
| 55-59           | 2        | 297                              | 80-84                             |           |                         |
| 60-64           | 1        | 31                               | 85-89                             |           |                         |
| 65-69           |          |                                  | 90-94                             | 1         | 355                     |
| 70-74           |          |                                  | 95-99                             |           |                         |
| 75+             |          |                                  | 100+                              |           |                         |
| <b>Total</b>    | <b>7</b> | <b>248</b>                       | <b>Total</b>                      | <b>10</b> | <b>429</b>              |

# 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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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.



October 2018

Rockwood Water PUD/2672  
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 OPSRP and Retiree Health Insurance Account (RHIA) 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](mailto: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, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- 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](http://www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx).



October 2018  
Rockwood Water PUD/2672

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.



October 2018  
Rockwood Water PUD/2672

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**

**INDEPENDENT EMPLOYERS**

**Rockwood Water PUD -- #2672**

**October 2018**

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## Executive Summary

Milliman has prepared this report for Rockwood Water PUD to:

- Provide summary December 31, 2017 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2019 through June 30, 2021, and
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2017.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2017 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Rockwood Water PUD.

### Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2019 through June 30, 2021 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

#### ***Employer Rates Effective July 1, 2019 for Rockwood Water PUD***

|   | Payroll       |                 |               |
|---|---------------|-----------------|---------------|
|   | Tier 1/Tier 2 | OPSRP           |               |
|   |               | General Service | Police & Fire |
| <b>Pension</b>                              |               |                 |               |
| Normal cost rate                            | 14.23%        | 8.40%           | 13.03%        |
| Tier 1/Tier 2 UAL rate <sup>1</sup>         | 6.91%         | 6.91%           | 6.91%         |
| OPSRP UAL rate                              | 1.45%         | 1.45%           | 1.45%         |
| Side account rate relief                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net pension contribution rate</b>        | <b>22.59%</b> | <b>16.76%</b>   | <b>21.39%</b> |
| <b>Retiree Healthcare</b>                   |               |                 |               |
| Normal cost rate                            | 0.06%         | 0.00%           | 0.00%         |
| UAL rate                                    | 0.00%         | 0.00%           | 0.00%         |
| <b>Net retiree healthcare rate</b>          | <b>0.06%</b>  | <b>0.00%</b>    | <b>0.00%</b>  |
| <b>Total net employer contribution rate</b> | <b>22.65%</b> | <b>16.76%</b>   | <b>21.39%</b> |

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.

<sup>1</sup> 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, but does not limit changes in rates for individual employers related to side accounts. 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 excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer'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. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2017 is 72%.

| <b>Funded Status as of December 31, 2019</b>                 | <b>70% to 130%</b> | <b>Under 60% or Over 140%</b> |
|--|--------------------|-------------------------------|
| 2019-2021 Tier 1/Tier 2 Normal Cost + Tier 1/Tier 2 UAL Rate | 21.14%             | 21.14%                        |
| Minimum 2021-2023 Rate                                       | 16.91%             | 12.68%                        |
| Maximum 2021-2023 Rate                                       | 25.37%             | 29.60%                        |

# 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               | \$7,031,202                   | \$8,782,146                           | \$1,750,944          | 80%                  | \$1,153,789         | 152%  |
| 12/31/2013               | 7,741,377                     | 8,677,555                             | 936,178              | 89%                  | 1,240,344           | 75%   |
| 12/31/2014               | 7,886,747                     | 9,725,263                             | 1,838,516            | 81%                  | 1,207,711           | 152%  |
| 12/31/2015               | 7,411,554                     | 9,839,789                             | 2,428,235            | 75%                  | 1,306,692           | 186%  |
| 12/31/2016               | 7,325,991                     | 10,577,170                            | 3,251,179            | 69%                  | 1,423,497           | 228%  |
| 12/31/2017               | 6,500,210                     | 9,087,858                             | 2,587,648            | 72%                  | 1,347,237           | 192%  |



# Executive Summary

## Accounting Information (continued)

### ***Retiree Healthcare***

In June 2015, the GASB issued Statement 75, which replaced 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) 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.

### ***Rockwood Water PUD***

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| T1/T2 UAL  | \$2,587,647               | \$3,251,179       |
| Allocated pooled OPSRP UAL                       | 203,017                   | 245,072           |
| Side account                                     | 0                         | 0                 |
| Net unfunded pension actuarial accrued liability | 2,790,664                 | 3,496,251         |
| Combined valuation payroll                       | 1,347,237                 | 1,423,497         |
| Net pension UAL as a percentage of payroll       | 207%                      | 246%              |
| Calculated side account rate relief              | 0.00%                     | 0.00%             |
| Allocated pooled RHIA UAL                        | (\$15,437)                | (\$194)           |

*In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.*

# Executive Summary

## Principal Valuation Results (continued)

### *Tier 1/Tier 2*

|  | Actuarial Valuation as of |                   |
|--|---------------------------|-------------------|
|  | December 31, 2017         | December 31, 2016 |
| Normal cost  | \$73,401                  | \$81,347          |
| Tier 1/Tier 2 valuation payroll                                  | 515,735                   | 584,765           |
| Tier 1/Tier 2 pension normal cost rate                           | 14.23%                    | 13.91%            |
| Tier 1/ Tier 2 Actuarial accrued liability                       | \$9,087,858               | \$10,577,170      |
| Actuarial asset value  | 6,500,211                 | 7,325,991         |
| Tier 1/Tier 2 Unfunded actuarial accrued liability               | 2,587,647                 | 3,251,179         |
| Tier 1/ Tier 2 Funded status                                     | 72%                       | 69%               |
| Combined valuation payroll                                       | \$1,347,237               | \$1,423,497       |
| Tier 1/Tier 2 UAL as a percentage of payroll                     | 192%                      | 228%              |
| Tier 1/Tier 2 UAL rate<br>(includes Multnomah Fire District #10) | 6.91%                     | 7.58%             |
| Tier 1/Tier 2 active members <sup>1</sup>                        | 6                         | 7                 |
| Tier 1/Tier 2 dormant members                                    | 8                         | 7                 |
| Tier 1/Tier 2 retirees and beneficiaries                         | 21                        | 25                |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Executive Summary

## Principal Valuation Results (continued)

### OPSRP

| (\$ in millions)                        | Actuarial Valuation as of |                   |
|---|---------------------------|-------------------|
|   | December 31, 2017         | December 31, 2016 |
| General service normal cost             | \$435.7                   | \$402.9           |
| OPSRP general service valuation payroll | 5,187.5                   | 4,746.4           |
| General service normal cost rate        | 8.40%                     | 8.49%             |
| Police and fire normal cost             | \$86.6                    | \$80.6            |
| OPSRP police and fire valuation payroll | 664.5                     | 609.4             |
| Police and fire normal cost rate        | 13.03%                    | 13.22%            |
| Actuarial accrued liability             | \$5,634.7                 | \$4,717.0         |
| Actuarial asset value                   | 4,116.5                   | 3,021.4           |
| Unfunded actuarial accrued liability    | 1,518.2                   | 1,695.6           |
| Funded status                           | 73%                       | 64%               |
| Combined valuation payroll              | \$10,098.9                | \$9,872.6         |
| UAL as a percentage of payroll          | 15%                       | 17%               |
| UAL rate                                | 1.45%                     | 1.56%             |

### Retiree Healthcare

| (\$ in millions)                     | Actuarial Valuation as of |                   |
|--------------------------------------|---------------------------|-------------------|
|                                      | December 31, 2017         | December 31, 2016 |
| <b>RHIA</b>                          |                           |                   |
| 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%             |

# 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 |
|---|------------|------------|-------|
| <b>1. Side account as of December 31, 2016</b>                                    | <b>N/A</b> |            |       |
| 2. Deposits made during 2017  |            |            |       |
| 3. Administrative expenses  |            |            |       |
| 4. Amount transferred to employer reserves during 2017                            |            |            |       |
| 5. Side account earnings during 2017  |            |            |       |
| <b>6. Side account as of December 31, 2017</b><br><b>(1. + 2. + 3. + 4. + 5.)</b> |            |            |       |

# Side Account Information

## Side Account Balances

|                | December 31, 2017 | December 31, 2016 |
|----------------|-------------------|-------------------|
| Side account 1 | \$0               | \$0               |
| Side account 2 | 0                 | 0                 |
| Side account 3 | 0                 | 0                 |
| <b>Total</b>   | <b>\$0</b>        | <b>\$0</b>        |

## 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, 2017 | December 31, 2016 |
|---|-------------------|-------------------|
| 1. Total side account   | \$0               | \$0               |
| 2. Combined valuation payroll                                 | 1,347,237         | 1,423,497         |
| 3. Average Amortization factor                                | 8.312             | 8.994             |
| 4. <b>Total side account rate (-1. ÷ 2. ÷ 3.)<sup>1</sup></b> | <b>0.00%</b>      | <b>0.00%</b>      |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 Tier 1/Tier 2 Pension Assets

|   | December 31, 2017  | December 31, 2016  |
|---|--------------------|--------------------|
| 1. Member reserves                                    | \$829,682          | \$760,866          |
| 2. Employer reserves                                  | 2,994,465          | 3,287,974          |
| 3. Benefits in force reserve                          | 2,676,063          | 3,277,152          |
| <b>4. Total market value of assets (1. + 2. + 3.)</b> | <b>\$6,500,211</b> | <b>\$7,325,991</b> |

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 retired members and beneficiaries.

### Reconciliation of Tier 1/Tier 2 Pension Assets

|   | December 31, 2016 to<br>December 31, 2017 |
|---|---|
| 1. Market value of assets at beginning of year                                    | \$7,325,991                               |
| 2. Regular employer contributions   | 117,473                                   |
| 3. Benefit payments and expenses  | (498,485)                                 |
| 4. Adjustments <sup>1</sup>   | (1,260,321)                               |
| 5. Interest credited  | 815,552                                   |
| 6. Total transferred from side accounts   | 0   |
| <b>7. Market value of assets at end of year<br/>(1. + 2. + 3. + 4. + 5. + 6.)</b> | <b>\$6,500,211</b>                        |

<sup>1</sup> 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.

# Tier 1/Tier 2 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 by Tier/Member Classification

|                        | December 31, 2017 | December 31, 2016 |
|------------------------|-------------------|-------------------|
| Tier 1 Police & Fire   | \$0               | \$0               |
| Tier 1 General Service | 32,169            | 41,648            |
| Tier 2 Police & Fire   | 0                 | 0                 |
| Tier 2 General Service | 41,232            | 39,699            |
| <b>Total</b>           | <b>\$73,401</b>   | <b>\$81,347</b>   |

### Change in Tier 1/Tier 2 Normal Cost

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 |
|-------------|----------------|---------------|------------|
| Normal Cost | \$73,401       | \$73,401      | \$0        |



# Tier 1/Tier 2 Valuation Results

## Liabilities

### **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.

### *Summary of Actuarial Accrued Liability by Tier/Member Classification*

|  | December 31, 2017  | December 31, 2016   |
|--|--------------------|---------------------|
| Active Members                           |                    |                     |
| ▪ Tier 1 Police & Fire                   | \$0                | \$0                 |
| ▪ Tier 1 General Service                 | 556,031            | 567,303             |
| ▪ Tier 2 Police & Fire                   | 0                  | 0                   |
| ▪ Tier 2 General Service                 | 1,090,959          | 987,801             |
| ▪ <b>Total Active Members</b>            | <b>\$1,646,990</b> | <b>\$1,555,104</b>  |
| Dormant Members                          | 1,379,334          | 1,282,582           |
| Retired Members and Beneficiaries        | 6,061,535          | 7,739,484           |
| <b>Total Actuarial Accrued Liability</b> | <b>\$9,087,858</b> | <b>\$10,577,170</b> |

### **Change in Tier 1/Tier 2 Actuarial Accrued Liability**

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 | \$9,087,858    | \$9,087,858   | \$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  | \$9,087,858       | \$10,577,170      |
| 2. Actuarial value of assets  | 6,500,211         | 7,325,991         |
| 3. Unfunded accrued liability (1. – 2.)                                       | 2,587,647         | 3,251,179         |
| 4. Funded percentage (2. ÷ 1.)  | 72%               | 69%               |
| 5. Combined valuation payroll   | \$1,347,237       | \$1,423,497       |
| 6. Unfunded accrued liability as % of combined valuation payroll<br>(3. ÷ 5.) | 192%              | 228%              |

#### 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<br>December 31, 2016 | Payment   | Interest  | UAL<br>December 31, 2017 | Next Year's<br>Payment |
|-------------------|--------------------------|-----------|-----------|--------------------------|------------------------|
| December 31, 2013 | \$929,974                | \$73,702  | \$64,130  | \$920,402                | \$76,281               |
| December 31, 2015 | \$1,492,405              | \$109,206 | \$103,262 | \$1,486,461              | \$113,030              |
| December 31, 2017 | N/A                      | N/A       | N/A       | \$180,784                | \$12,765               |
| <b>Total</b>      |                          |           |           | <b>\$2,587,647</b>       | <b>\$202,076</b>       |

# Tier 1/Tier 2 Valuation Results

## Unfunded Accrued Liability (UAL)

### **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                                  | \$10,577,170     |
| b. Normal cost at December 31, 2016 (excluding assumed expenses)                     | 76,973           |
| c. Benefit payments during 2017  | (494,640)        |
| d. Interest at 7.20% to December 31, 2017  | 746,520          |
| e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)           | 10,906,023       |
| 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.)               | 10,906,023       |
| 2. Actuarial accrued liability at December 31, 2017                                  | 9,087,858        |
| 3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)                            | 1,818,165        |
| 4. Expected actuarial value of assets  |                  |
| a. Actuarial value of assets at December 31, 2016                                    | 7,325,991        |
| b. Contributions for 2017 <sup>1</sup>   | 117,473          |
| c. Benefit payments and expenses during 2017   | (498,485)        |
| d. Interest at 7.20% to December 31, 2017  | 513,755          |
| e. Expected actuarial value of assets at December 31, 2017 (a. + b. + c. + d.)       | 7,458,734        |
| 5. Actuarial value of assets at December 31, 2017                                    | 6,500,211        |
| 6. Gain/(loss) on actuarial value of assets (5. - 4.e.)                              | (958,524)        |
| <b>7. Total actuarial gain/(loss) (3. + 6.)</b>                                      | <b>\$859,641</b> |

### **Unfunded Accrued Liability Reconciliation**

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

|   |                    |
|---|--------------------|
| <b>1. UAL at December 31, 2016</b>                                    | <b>\$3,251,179</b> |
| 2. Expected increase  | 196,109            |
| 3. Liability (gain)/loss  | (1,818,165)        |
| 4. Asset (gain)/loss  | 958,524            |
| 5. Change due to changes in assumptions, methods, and plan provisions | 0                  |
| <b>6. UAL at December 31, 2017 (1. + 2. + 3. + 4. + 5.)</b>           | <b>\$2,587,647</b> |

<sup>1</sup> Includes rate relief from side accounts.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Normal Cost Rate*

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

### *Development of Tier 1/Tier 2 Normal Cost Rate*

|                        | December 31, 2017 |   |                        | December 31, 2016 |   |                        |
|------------------------|-------------------|---|------------------------|-------------------|---|------------------------|
|                        | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate | Normal Cost       | Employer<br>Tier 1/Tier 2<br>Valuation<br>Payroll | Normal<br>Cost<br>Rate |
| Tier 1 Police & Fire   | \$0               | \$0   | 0.00%                  | \$0               | \$0   | 0.00%                  |
| Tier 1 General Service | 32,169            | 129,516   | 24.84%                 | 41,648            | 208,507   | 19.97%                 |
| Tier 2 Police & Fire   | 0                 | 0   | 0.00%                  | 0                 | 0   | 0.00%                  |
| Tier 2 General Service | 41,232            | 386,219   | 10.68%                 | 39,699            | 376,258   | 10.55%                 |
| <b>Total</b>           | <b>\$73,401</b>   | <b>\$515,735</b>                                  | <b>14.23%</b>          | <b>\$81,347</b>   | <b>\$584,765</b>                                  | <b>13.91%</b>          |

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### *Development of Tier 1/Tier 2 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 Tier 1/Tier 2 UAL               | \$2,587,647       | \$3,251,179       |
| 2. Next year's Tier 1/Tier 2 UAL payment | 202,076           | 241,427           |
| 3. Combined valuation payroll            | 1,347,237         | 1,423,497         |
| 4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)      | 15.00%            | 16.96%            |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)***

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

|   | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|---|--|---|
| 1. Tier 1/Tier 2 pension contribution rates           |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate    | 14.23%   | 13.91%  |
| b. Tier 1/Tier 2 UAL rate                             | 15.00%   | 16.96%  |
| c. Multnomah Fire District #10 rate                   | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br>(a. + b. + c.) | 29.38%   | 31.01%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Adjustments Due to Rate Collar and Minimum Rate Requirements***

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 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

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 and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

|  |                          |         |
|--|--------------------------|---------|
| 1. Current net Tier 1/Tier 2 pension contribution rate   |                          | 17.62%  |
| 2. Employer contribution rate attributable to side accounts  |                          | 0.00%   |
| 3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)  |                          | 17.62%  |
| 4. Size of rate collar   |                          |         |
| a. 20% of current employer contribution rate (20% x 3.)  |                          | 3.52%   |
| b. Preliminary size of rate collar (maximum of 3% or a.)   |                          | 3.52%   |
| c. Funded percentage   |                          | 72%     |
| 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.) |                          | 3.52%   |
| 5. July 1, 2019 minimum employer contribution rate   | (3. – 4.d. but not < 0%) | 14.10%  |
| 6. July 1, 2019 maximum employer contribution rate   | (3. + 4.d.)              | 21.14%  |
| 7. July 1, 2019 total pension rate, before adjustment  |                          | 29.38%  |
| 8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)   |                          | (8.24%) |
| 9. July 1, 2019 Tier 1/Tier 2 UAL rate, before collar  |                          | 15.00%  |
| 10. July 1, 2019 Tier 1/Tier 2 UAL rate, after collar  | (8. + 9.)                | 6.76%   |
| 11. July 1, 2019 Tier 1/Tier 2 pension rate, after collar  |                          | 21.14%  |
| 12. Tier 1/Tier 2 retiree healthcare rate  |                          | 0.06%   |
| 13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)  |                          | 0.00%   |
| 14. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment   |                          | 14.23%  |
| 15. July 1, 2019 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)                                  |                          | 14.23%  |
| 16. July 1, 2019 Tier 1/Tier 2 pension rate, after minimum adjustment  | (11. + 13.)              | 21.14%  |

# Tier 1/Tier 2 Valuation Results

## Contribution Rate Development

### ***Tier 1/Tier 2 Employer 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 and the 6 percent of payroll minimum employer contribution rate.

|  | <b>July 1, 2019 Rates<br/>calculated as of<br/>December 31, 2017</b> | <b>Advisory July 1, 2019<br/>Rates calculated as<br/>of December 31, 2016</b> |
|--|--|---|
| 1. Tier 1/Tier 2 pension contribution rates                                    |  |   |
| a. Employer Tier 1/Tier 2 pension normal cost rate                             | 14.23%   | 13.91%  |
| b. Tier 1/Tier 2 UAL rate  | 6.76%  | 7.44%   |
| c. Multnomah Fire District #10 rate  | 0.15%  | 0.14%   |
| d. Total Tier 1/Tier 2 pension rate<br><i>(a. + b. + c., minimum of 5.94%)</i> | 21.14%   | 21.49%  |



# Data

## Demographic Information

### *Employer Valuation Payroll*

|                                   | General Service    | Police & Fire | Total              |
|-----------------------------------|--------------------|---------------|--------------------|
| Tier 1                            | \$129,516          | \$0           | \$129,516          |
| Tier 2                            | 386,219            | 0             | 386,219            |
| Tier 1/Tier 2 valuation payroll   | 515,735            | 0             | 515,735            |
| OPSRP valuation payroll           | 831,502            | 0             | 831,502            |
| <b>Combined valuation payroll</b> | <b>\$1,347,237</b> | <b>\$0</b>    | <b>\$1,347,237</b> |

### *Employer Member Census*

|  | December 31 |          |           |           |           |          |           |           |
|--|-------------|----------|-----------|-----------|-----------|----------|-----------|-----------|
|  | 2017        |          |           |           | 2016      |          |           |           |
|  | Tier 1      | Tier 2   | OPSRP     | Total     | Tier 1    | Tier 2   | OPSRP     | Total     |
| <b>Active Members <sup>1</sup></b>                                     |             |          |           |           |           |          |           |           |
| General Service  | 2           | 4        | 11        | 17        | 3         | 4        | 11        | 18        |
| Police & Fire  | 0           | 0        | 0         | 0         | 0         | 0        | 0         | 0         |
| Total  | 2           | 4        | 11        | 17        | 3         | 4        | 11        | 18        |
| <b>Active Members with previous service segments with the employer</b> |             |          |           |           |           |          |           |           |
| General Service  | 1           | 1        | N/A       | 2         | 1         | 1        | N/A       | 2         |
| Police & Fire  | 0           | 0        | N/A       | 0         | 0         | 0        | N/A       | 0         |
| Total  | 1           | 1        | N/A       | 2         | 1         | 1        | N/A       | 2         |
| <b>Dormant Members</b>   |             |          |           |           |           |          |           |           |
| General Service  | 7           | 1        | 3         | 11        | 6         | 1        | 1         | 8         |
| Police & Fire  | 0           | 0        | 0         | 0         | 0         | 0        | 0         | 0         |
| Total  | 7           | 1        | 3         | 11        | 6         | 1        | 1         | 8         |
| <b>Retired Members and Beneficiaries</b>                               |             |          |           |           |           |          |           |           |
| General Service  | 20          | 1        | 0         | 21        | 23        | 2        | 0         | 25        |
| Police & Fire  | 0           | 0        | 0         | 0         | 0         | 0        | 0         | 0         |
| Total  | 20          | 1        | 0         | 21        | 23        | 2        | 0         | 25        |
| <b>Grand Total Number of Members</b>                                   | <b>30</b>   | <b>7</b> | <b>14</b> | <b>51</b> | <b>33</b> | <b>8</b> | <b>12</b> | <b>53</b> |

<sup>1</sup> Active counts do not include concurrent employees who have a separate dominant employer.

# Data

## Demographic Information (continued)

### *Employer Tier 1/Tier 2 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        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 40-44        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 45-49        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 50-54        |                  |          |          | 1        |          |          |          |          |          | 1        |
| 55-59        |                  |          |          |          |          |          | 1        |          |          | 1        |
| 60-64        |                  |          |          |          | 1        |          |          |          |          | 1        |
| 65-69        |                  |          |          |          |          |          |          |          |          |          |
| 70-74        |                  |          |          |          |          |          |          |          |          |          |
| 75+          |                  |          |          |          |          |          |          |          |          |          |
| <b>Total</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>4</b> | <b>1</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>6</b> |

### *Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2017*

| Dormant Members |          |                                  | 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                             | 1         | 3,630                   |
| 35-39           |          |                                  | 60-64                             | 4         | 1,592                   |
| 40-44           |          |                                  | 65-69                             | 8         | 2,502                   |
| 45-49           | 1        | 0                                | 70-74                             | 4         | 588                     |
| 50-54           | 3        | 1,750                            | 75-79                             | 1         | 214                     |
| 55-59           | 1        | 6                                | 80-84                             | 1         | 2,030                   |
| 60-64           | 2        | 2,388                            | 85-89                             | 1         | 668                     |
| 65-69           |          |                                  | 90-94                             |           |                         |
| 70-74           | 1        | 0                                | 95-99                             | 1         | 1,991                   |
| 75+             |          |                                  | 100+                              |           |                         |
| <b>Total</b>    | <b>8</b> | <b>1,254</b>                     | <b>Total</b>                      | <b>21</b> | <b>1,775</b>            |

# 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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