OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM BOARD MEETING

Friday October 5, 2018 10:00 A.M.	PERS 11410 SW 68th Parkway Tigard, OR

	ITEM	PRESENTER
A.	**Administration**	
1.	August 3, 2018 Board Meeting Minutes	OLINECK
2.	Director's Report a. Forward-Looking Calendar b. OPERF Investment Report c. Budget Execution Report d. Board Orientation Manual	
B.	**Administrative Rulemaking**	
1.	Adoption of IAP Target Date Fund Rules	VAUGHN
2.	Adoption of Rules Implementing SB 1566 (2018) a. Adoption of Pooled Side Accounts for School District Employers Rule b. Adoption of Employer Lump Sum Payments Rules	
C.	**Action and Discussion Items**	
1.	Legislative Update	TAYLOR
2.	SB 1566 Update a. School District Unfunded Liability Fund b. Employer Incentive Fund	SOSNE
3.	Member & Employer Survey Results	ROSSMAN
4.	2017 Valuation Results and Adoption of Employer Rates	MILLIMAN / HEMBREE

Public testimony will be taken on action items at the Chair's discretion.
Please contact 503.603.7785 in advance of the meeting to notify staff of your request to provide testimony at the meeting.

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM
BOARD MEETING MINUTES

August 3, 2018

Board members present:

Chair John Thomas, Stephen Buckley, Krystal deAsis, and Steve Demarest were present. Vice-Chair Lawrence Furnstahl attended by phone.

Staff present:

Alyse Greer, AnneMarie Vu, Drew Glassroth, Eva Polney, Janice Richards, Jason Stanley, Jennie Little, Jordan Masanga, Katie Brogan, Laurel Galego, Linda Barnett, Marjorie Taylor, Melanie Chandler, Neil Jones, Shane Perry, Stephanie Vaughn, Yong Yang, Yvette Elledge-Rhodes, Kevin Olineck

Others present:

Lydia Gerike, Nancy Brewer, Tahni Fagerberg, Tim Nesbitt, Nate Carter, Carol Samuels, Dave Bolton, Jeff Renfro, David Barenberg, Sadhana Shenoy, Scott Preppernau, Matt Larrabee, Claire Havener, Shaunna Tobiasson, Elana Pirtle-Guiney, David Moore, Billie Henley, David Lacy, Debra Grabler, Jeff Gudman, Karl Cheng, Bob Burket, Sheila Murray

Chair John Thomas called the meeting to order at 10:04 a.m.

ADMINISTRATION

A.1.A MEETING MINUTES OF MAY 24, 2018

Board member Demarest moved to approve the minutes submitted from the May 24, 2018 Board meeting. Board member Buckley seconded the approval of the minutes. The motion passed unanimously.

A.1.B MEETING MINUTES OF JUNE 1, 2018

Board member Demarest moved to approve the minutes submitted from the June 1, 2018 Board meeting. Board member Buckley seconded the approval of the minutes. The motion passed unanimously.

A.1.C MEETING MINUTES OF JUNE 27, 2018

Board member Buckley moved to approve the minutes submitted from the June 27, 2018 Board meeting. Board member Demarest seconded the approval of the minutes. The motion passed unanimously.

A.2. DIRECTOR'S REPORT

Director Kevin Olineck reviewed the Forward Looking Calendar and highlighted the important items to be considered by the Board during the rest of the year. He noted that the 2019-21 Employer Rates will be set at the October meeting. The December meeting will focus on the Board Scorecard Report on the agency performance measures. Olineck noted the proposed dates for the 2019 calendar and asked members to review these with their personal calendars to ensure the proposed dates would be possible.

Olineck presented the Oregon Investment Council (OIC) Investment Report of the Oregon Public Employees Retirement Fund (OPERF) for the period ending June 2018. He notes there was a positive return year-to-date.

Olineck presented the Budget Execution Report. The current projected positive variance is $4,605,534. The variance is being looked at to complete some staffing requirements and other service needs due to legislative changes. Staff are currently preparing requests for the September 2018 Emergency Board.

The IAP project was put on hold in mid-June. PERS staff will be documenting and preserving the knowledge and project work so IAP enhancements can be made in the future.

Stephanie Vaughn, Policy Analysis and Compliance Section Manager, presented the Lewis Final Order Settlement Agreement. Chair Thomas commented that due to its complicated nature this case goes back to 2006. Board member deAsis moved to approve the Settlement Agreement and Stipulated Final Order in the case of Cynthia Lewis. Furnstahl seconded. The motion passed unanimously.

Olineck addressed the public testimony letter requesting further analysis of the UAL from the Oregon Business Council, Association of Oregon Counties, League of Oregon Cities and Oregon School Boards Association. Board member Buckley questioned whether PERS should be responding to requests from external stakeholders. Chair Thomas stated that the Board would not be addressing this request.

ADMINSTRATIVE RULEMAKING

Stephanie Vaughn, Policy Analysis and Compliance Section Manager, presented.

B.1. NOTICE OF IAP TARGET DATE FUND RULES

Vaughn presented notice of rulemaking for IAP Target Date Fund Rules, OAR 459-007-0335, Crediting Earnings for IAP Account Pre-Retirement Death Benefit Payments and OAR 459-080-0015, Investment of IAP Account Balance. These rules address the administration of IAP account of deceased non-retired members with Target Date Funds. A rule making hearing will be held August 28, 2018. The public comment period ends September 7, 2018. No Board action was required.

B.2. NOTICE AND FIRST READING OF RULES IMPLEMENTING SB 1566 (2018)

a. Notice of Pooled Side Accounts for School District Employers Rule
   Vaughn presented notice of rulemaking for Pooled Side Accounts for School District Employers Rule, OAR 459-009-0095 under Senate Bill 1566 (2018). The new rule specifies that the new pooled side account will be administered in the same manner as the individual employer side accounts, with modifications as needed to accommodate the nature of multiple employers in one side account. A rulemaking hearing will be held August 28, 2018, at 2:00 p.m. at PERS headquarters in Tigard. The public comment period ends September 7, 2018, at 5:00 p.m. No Board action was required.

b. First Reading of Employer Lump Sum Payments Rule
   Vaughn presented first reading of Employer Lump Sum Payments Rule, OAR 459-009 0086. Staff recommends allowing lump sum payments that are made today to be eligible to be considered for matching funds once the Employer Incentive Fund program is implemented. This policy recommendation has been incorporated into the rule and staff will move forward with the policy unless otherwise directed by the Board. A rulemaking hearing will be held August 28, 2018, at 2:00 p.m. at PERS headquarters in Tigard. The

public comment period ends September 7, 2018, at 5:00 p.m. No Board action was required.

B.3. <u>ADOPTION OF RULES IMPLEMENTING 2018 LEGISLATION</u>

a. HB 4012 (Work After Retirement)
Vaughn presented modifications to the Work After Retirement Exception rule, OAR 459-017-0060. This rule is being modified to extend the sunset date for the work after retirement exception for career and technical education teachers. The exception was scheduled to expire June 30, 2018, but House Bill 4012 (2018) extended the exception to June 30, 2023. A rulemaking hearing was held June 26, 2018, at 2:00 p.m. at PERS headquarters in Tigard. No members of the public attended. The public comment period ended July 6, 2018, at 5:00 p.m. No public comment was received. Board member Buckley moved to adopt modifications to the Work After Retirement Exception rule, as presented. Board member Demarest seconded. The motion passed unanimously.

b. SB 1546 (OPSRP Vesting for Judge Members)
This rule incorporates the provisions of Senate Bill 1546 which allows judge members to use hours of service worked as a judge toward vesting as an OPSRP member. No public comment was received on the rule. The rule was not modified since it was noticed. Buckley moved to adopt modifications to the OPSRP Member Vesting rule, as presented. The motion was seconded by Demarest. The motion passed unanimously.

B.4. <u>ADOPTION OF PHIP ENROLLMENT RULE</u>

Vaughn presented the Adoption of Health Insurance Program rule. The amendments to this rule address retroactive effective date situations and provide an enrollment window for eligible persons in these circumstances. No public comment was received on the rule. The rule was not modified since it was noticed. Board member deAsis motioned to adopt modifications to the Health Insurance Program rule, as presented. The motion was seconded by Buckley. The motion passed unanimously.

<u>ACTION AND DISCUSSION ITEMS</u>

C.1. <u>IAP TDF IMPLEMENTATION UPDATE</u>

Yvette Elledge-Rhodes, Deputy Director, presented. She reviewed the ongoing activities to implement the new target date fund (TDF) investment structure into the IAP. Staff had been preparing an Emergency Board request for the TDF efforts but the positive variance may be used instead. December Perspectives will contain additional information for members. Annual statements will show their TDF. A new communications officer will start soon and begin centralizing communications. No Board action was required.

C.2 <u>2019-21 AGENCY BUDGET DEVELOPMENT</u>

Budget Officer, Linda Barnett, presented the 2019-21 Agency Request Budget (ARB) for the Board's approval for submission to the Department of Administrative Services/Chief Financial Office. The majority of this request represents benefit payments. The total request is for $12.6 billion. The operating budget request is $126.8 million. This amount also includes the amounts for eight proposed policy packages. Policy option package (POP) 108 will not move forward. Furnstahl noted that when POP 108 is removed from the PERS Budget/PERF Comparison from the calculation the administrative cost as percent of assets would fall below .07 percent which gives a comparison to the historical trend and gives a sense of the cost of running the program compared to the scale of the program. Of the 15% increase biennium to biennium, 5% is to maintain service levels and the rest is mostly required or critical costs. Olineck noted the POPs will continue to be refined as the budget process continues.

Board member deAsis motioned to approve the 2019-21 Agency Request Budget as presented for submission to the Department of Administrative Services/Chief Financial Office. The motion was seconded by Buckley. The motion passed unanimously.

C.3 2017 SYSTEM-WIDE VALUATION RESULTS

Actuaries Matt Larrabee and Scott Preppernau of Milliman presented the 2017 System-wide Valuation Report as of December 31, 2017. The employer specific contribution rates will be presented for adoption at the October Board meeting and will be effective starting July 1, 2019.

Thomas adjourned the Board meeting at 11:42 a.m.

Respectfully submitted,

Kevin Olineck, Director

PERS Board Meeting
Forward-Looking Calendar

Friday, December 7, 2018*
2019 Agency Legislative Concept
Actuarial Financial Modeling Results
Board Scorecard Report on Agency Performance Measures

Friday, February 1, 2019
Preliminary 2018 Earnings Crediting and Reserving
2019 Legislative Session Update
Annual Report of Executive Director's Financial Transactions

Monday, April 1, 2019*
Final 2018 Earnings Crediting and Reserving
2019 Legislative Session Update

Friday, May 31, 2019
2019 Legislative Session Update
Board Scorecard Report on Agency Performance Measures
2020 Retiree Health Insurance Plan Renewals and Rates
Overview of Actuarial Methods & Economic Assumptions
OSGP Advisory Committee Appointments

Friday, July 26, 2019*
2019 Legislative Session Review
Adoption of Valuation Methods & Assumptions including Assumed Rate of Return
Adoption of Assumed Rate Oregon Administrative Rule

Friday, October 4, 2019
Member & Employer Survey Results
System Valuation Results – Advisory Employer Rates

Friday, December 6, 2019*
Board Scorecard Report on Agency Performance Measures
Valuation Update and Financial Modeling Results
Adoption of Actuarial Equivalency Factor Tables

*Audit Committee planned for post-Board meeting

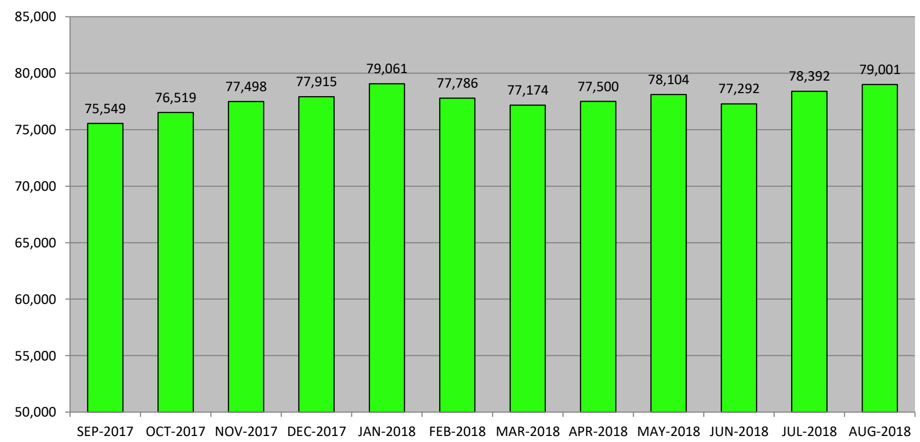
Returns for periods ending AUG-2018 **Oregon Public Employees Retirement Fund**

OPERF	Policy[1]	Target[1]	$ Thousands[2]	Actual	Year-To-Date[3]	1 YEAR	2 YEARS	3 YEARS	4 YEARS	5 YEARS	7 YEARS	10 YEARS
	Regular Account				Historical Performance (Annual Percentage)							
Public Equity	32.5-42.5%	37.5%	$ 27,406,648	36.0%	**3.19**	**12.11**	**15.19**	**12.36**	**7.82**	**10.29**	**10.88**	**7.55**
Private Equity	13.5-21.5%	17.5%	$ 15,959,021	21.0%	**12.99**	**19.23**	**18.07**	**13.20**	**12.27**	**13.54**	**12.42**	**10.13**
Total Equity	**50.0-60.0%**	**55.0%**	**$ 43,365,669**	**56.9%**								
Opportunity Portfolio	0-3%	0%	$ 1,801,774	2.4%	**6.34**	**8.39**	**8.75**	**7.34**	**6.60**	**7.85**	**8.46**	**8.40**
Total Fixed	**15-25%**	**20.0%**	**$ 16,431,520**	**21.6%**	**(0.05)**	**(0.18)**	**0.76**	**2.04**	**1.81**	**2.61**	**3.33**	**5.27**
Real Estate	**9.5-15.5%**	**12.5%**	**$ 8,039,749**	**10.6%**	**7.37**	**9.75**	**9.37**	**10.19**	**10.38**	**11.17**	**11.29**	**6.16**
Alternative Investments	**0-12.5%**	**12.5%**	**$ 6,516,987**	**8.6%**	**0.05**	**2.50**	**5.75**	**4.59**	**1.78**	**3.15**	**2.30**	
Cash w/Overlay	**0-3%**	**0%**	**$ 2,003**	**0.0%**	**1.30**	**1.64**	**1.45**	**1.31**	**1.10**	**1.03**	**1.00**	**0.96**
TOTAL OPERF Regular Account		**100.0%**	**$ 76,157,701**	**100.0%**	**4.63**	**9.70**	**11.02**	**9.43**	**7.35**	**8.96**	**9.15**	**7.33**
OPERF Policy Benchmark					**4.37**	**9.40**	**11.24**	**9.59**	**7.73**	**9.46**	**9.68**	**7.76**
Value Added					**0.26**	**0.30**	**(0.22)**	**(0.17)**	**(0.38)**	**(0.50)**	**(0.53)**	**(0.43)**
Target Date Funds			**2,284,402**									
TOTAL OPERF Variable Account			**$ 558,785**		**3.83**	**12.19**	**14.84**	**12.43**	**7.60**	**10.18**	**10.52**	**7.33**

Asset Class Benchmarks:

Benchmark	Year-To-Date	1 YEAR	2 YEARS	3 YEARS	4 YEARS	5 YEARS	7 YEARS	10 YEARS
Russell 3000	10.39	20.25	18.14	15.86	11.77	14.25	15.50	10.89
OREGON MSCI ACWI EX US IMI NET	(3.48)	3.49	10.96	8.43	2.93	5.78	5.63	3.83
MSCI ACWI IMI NET	3.53	11.80	14.41	12.01	7.18	9.80	10.13	7.02
RUSSELL 3000+300 BPS QTR LAG	10.51	17.85	21.18	14.66	14.92	17.10	16.24	13.63
OREGON CUSTOM FI BENCHMARK	(0.21)	(0.30)	0.33	1.65	1.48	2.15	2.79	3.86
OREGON CUSTOM REAL ESTATE BENCHMARK	5.10	7.35	7.88	9.09	9.99	10.22	10.72	6.20
CPI +4%	4.98	6.80	6.40	5.97	5.52	5.57	5.60	5.44
91 Day Treasury Bill	1.15	1.52	1.07	0.79	0.60	0.49	0.37	0.36

Total OPERF NAV
(includes Variable Fund assest)
One year ending AUG-2018
($ in Millions)



[1]OIC Policy revised June 2015.

[2]Includes impact of cash overlay management.

[3]For mandates beginning after January 1 (or with lagged performance), YTD numbers are "N/A". Performance is reflected in Total OPERF. YTD is not annualized.

Item A.2.b.

Oregon

Kate Brown, Governor

Public Employees Retirement System
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October 5, 2018

TO: Members of the PERS Board

FROM: Linda M. Barnett, Budget Officer

SUBJECT: October 2018 Board Report

2017-19 OPERATING BUDGET

Operating expenditures for July 2018 and preliminary expenditures for August 2018 were $3,383,305 and $3,995,132 respectively. Final expenditures for August closed in the Statewide Financial Management System (SFMS) on September 14, 2018, and will be included in the December 2018 report to the Board.

- To date, through the first 14 months (or 58.3%) of the 2017-19 biennium, the Agency has expended a total of $51,766,747 or 51% of PERS' legislatively approved operations budget of $101,458,179.
- The current projected positive variance is $4,743,041 or approximately 4.7% of the operations budget.

SEPTEMBER 2018 EMERGENCY BOARD REQUESTS

Staff prepared a request for additional budget limitation and the establishment of a permanent full-time Accountant 4 position in the Financial and Administrative Services Division for an Investment Accountant to account for the substantial increase in complexity of Target Date Fund accounting. In addition, PERS requested a rebalance between divisions consisting of two actions: (1) transfer of positions between divisions; and (2) transfer of savings (positive variance) among division budgets to fund unanticipated one-time and ongoing costs.

2017-19 NON-LIMITED BUDGET

The approved budget also consists of $11,060,530,435 in estimated non-limited budget expenditures which represent benefit payments, health insurance premiums, and third-party administration payments for both the PERS Health Insurance Program and the Individual Account Program (IAP).

Previously, PERS reported to the Board that we would continue to monitor the growth trend of IAP retirement payments. We will continue to monitor payments through September 2018, as we complete processing July 1, 2018 retirements (our highest volume retirement month). At that time, we will evaluate our projections for the remainder of the biennium and request any Non-Limited budget increases through the DAS' Chief Financial Office and the Legislative Fiscal Office.

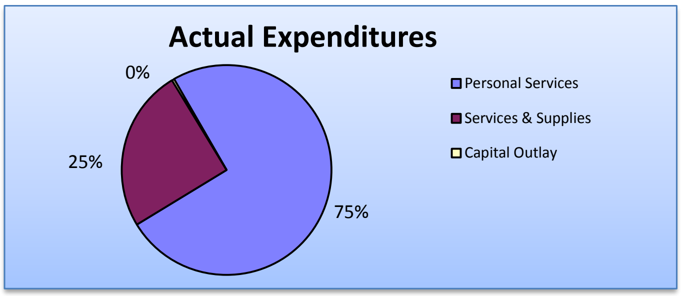
A.2.c. Attachment – *2017-19 Agency-wide Budget Execution Summary Analysis*

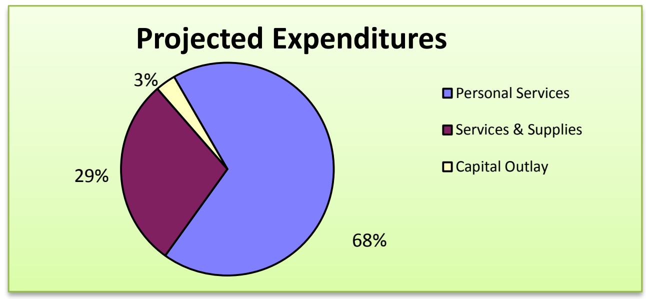
2017-19 Agency-wide Budget Execution
Summary Budget Analysis
Preliminary Summary For the Month of August 2018

Limited - Operating Budget

2017-19 Biennial Summary

Category	Actual Exp. To Date	Projected Expenditures	Total Est. Expenditures	2017-19 LAB	Variance
Personal Services	38,632,109	30,681,919	69,314,029	73,332,965	4,018,936
Services & Supplies	12,942,013	12,883,507	25,825,520	26,830,862	1,005,342
Capital Outlay	192,625	1,382,965	1,575,590	1,294,352	(281,238)
Total	**51,766,747**	**44,948,391**	**96,715,138**	**101,458,179**	**4,743,041**





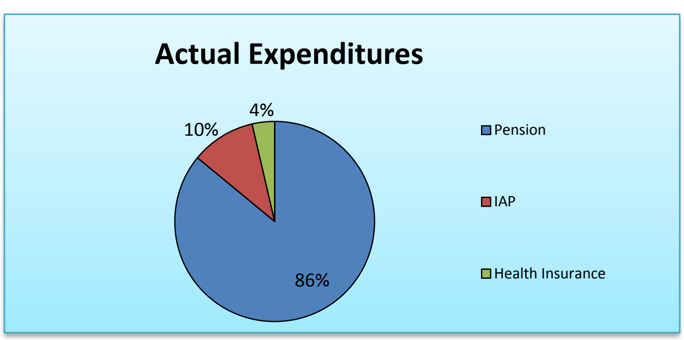
Monthly Summary

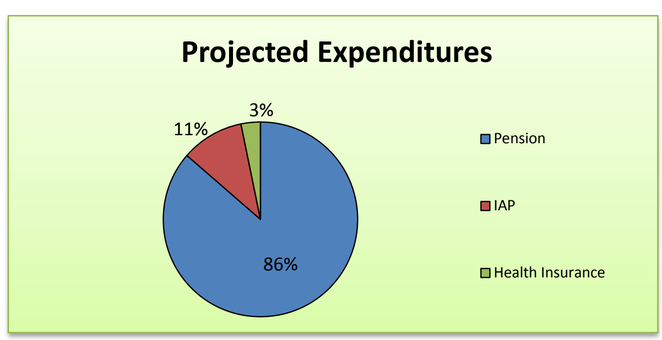
Category	Actual Exp.	Projections	Variance	Avg. Monthly Actual Exp.	Avg. Monthly Projected Exp.
Personal Services	2,844,974	3,054,218	209,244	2,759,436	3,068,192
Services & Supplies	1,150,158	1,193,941	43,783	924,430	1,288,351
Capital Outlay	0	0	0	13,759	138,297
Total	**3,995,132**	**4,248,159**	**253,027**	**3,697,625**	**4,494,840**

Non-Limited Budget

2017-19 Biennial Summary

Programs	Actual Exp To Date	Projected Expenditures	Total Est. Expenditures	Non-Limited LAB	Variance
Pension	5,136,679,001	4,393,185,730	9,529,864,731	9,122,000,000	(407,864,731)
IAP	620,973,307	528,745,868	1,149,719,175	1,056,900,000	(92,819,175)
Health Insurance	216,966,040	163,980,489	380,946,529	815,271,000	434,324,471
Total	**5,974,618,348**	**5,085,912,087**	**11,060,530,435**	**10,994,171,000**	**(66,359,435)**





OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Board Orientation Manual

Updated September 2018

TOPIC	PAGE

Public Employees Retirement System
11410 SW 68th Parkway
Tigard, OR 97223

https://oregon.gov/PERS

Objective
This orientation manual was created as a resource to assist you in your role as a PERS Board member and trust fund fiduciary. The manual contains links to various online resources, including relevant statutes, reference materials, financial, and actuarial information. It also includes an organizational structure view, as well as contact information for senior PERS staff.

We hope these materials are of assistance to you. Please do not hesitate to contact PERS staff if you have any questions in regard to these materials.

Overview
The Oregon Legislature is the "plan sponsor" for PERS, the system. The legislature determines the benefit structure for participating public employees. Those benefits have been modified over time, beginning with the inception of the plan in 1945 to establish benefits now known as Tier One; the creation of the Tier Two program for employees starting in 1996; the Oregon Public Service Retirement Program (OPSRP) for employees that started work after August 28, 2003; and the creation of the Individual Account Program (IAP), an account-based benefit for all PERS members, starting in 2004.

The Legislature also established PERS, the agency, to administer the retirement system in partnership with more than 900 public employers, including school districts, special districts, cities, counties, community colleges, universities, and state agencies. PERS is required to administer the retirement system for participating public employers, and must follow all relevant state and federal laws when determining and administering benefits.

PERS engages with over 367,000 current and former public employees or their beneficiaries, and maintains important data about their public employment service, salaries, and other information. PERS also administers a health insurance program for retirees (PERS Health Insurance Program or PHIP) and a 457(b) voluntary deferred compensation program (Oregon Savings Growth Plan or OSGP).

PERS Programs
The Agency is responsible for administration of the following programs:
1. The defined benefit pensions for Tier One, Tier Two, and OPSRP members.
2. The Individual Account Program (IAP), an account-based benefit, for <u>all</u> PERS members employed after January 1, 2004.
3. The PERS Health Insurance Program (PHIP), including the Retirement Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA).
4. The Oregon Savings Growth Plan (OSGP), a voluntary deferred compensation program for employees of eligible participating employers.

Overview of the Board's Role
The Board of the Oregon Public Employees Retirement System (PERS) is responsible for formulating policies that govern the administration of the Public Employees Retirement Fund and System, approve actuarial valuation results and resultant employer contribution rates, as well as approve required changes to plan rules. In the discharge of these responsibilities, PERS Board members serve the state of Oregon, its citizens, and trust fund beneficiaries, including over 900 participating employers, current and retired public employees, school district employees, and local government employees. As trustees of the Public Employees Retirement Fund, the PERS Board has a responsibility to manage and administer the system as set forth by law. The Board also monitors the plan for compliance with federal laws.

Appointment of Director and Consultants

The Board retains consultants and appoints a Director.

The Director serves at the discretion of the Board and is responsible for the PERS administrative staff. The Board delegates operating or administrative functions to the Director and provides governance oversight of those operating and administrative functions. It is important that the Board observes the distinctions between the policymaking and monitoring roles of the Board and the administrative and management functions delegated to the Director, staff, and external service providers.

Consultants include:

- Actuary;
- Legal counsel (Department of Justice as required by statute);
- Medical advisor; and
- Health insurance consultant.

PERS Board Member Information

The Legislature has delegated authority to the PERS Board of Trustees to administer the system. The Board is composed of five members who administer retirement (service and disability), death, and retiree health insurance benefits.

Oregon Revised Statutes specifies Board membership as:

- Three people with experience in business management, pension management, or investing who are not members of the PERS system;
- One person who is either an employee of the state in a management position or a person who holds an elective office in the governing body of a participating public employer other than the state; and
- One person representing public employees and retirees.

Board Member Bios: https://www.oregon.gov/pers/Pages/Board/PERS-Board-Members.aspx
Board Meeting Schedule: https://www.oregon.gov/pers/Pages/Board/PERS-Board-Information.aspx

Statutory Authority & Requirements

PERS' role and mandate are established in Oregon Revised Statutes Chapters 238 and 238A and through various pieces of legislation. Chapter 238 covers Tier One and Tier Two benefits while Chapter 238A covers the Oregon Public Service Retirement Plan (OPSRP) and the Individual Account Program (IAP).

- **Chapter 238** https://www.oregonlegislature.gov/bills_laws/ors/ors238.html
  Board members should pay particular attention to ORS238.600 – 238.670 which define the Administration of PERS and the Fund.
- **Chapter 238A** https://www.oregonlegislature.gov/bills_laws/ors/ors238A.html
  Board members should pay particular attention to ORS238A.050, and ORS238A.450-46060, which covers administration of the plan and the ability for the PERS Board to make rules respecting OPSRP, as well as the parameters within which these rules can be made.
- **Oregon Administrative Rules –Chapter 459**
  https://secure.sos.state.or.us/oard/displayChapterRules.action?selectedChapter=148
  Board members should pay particular attention to Chapter 459, Division 1 - Procedural Rules, and Division - 5 Administration.

Legislative Process

During legislative sessions, bills are introduced by various entities, including PERS, that impact PERS administration or benefits. As a part of the implementation process of any approved new laws, staff propose, for Board approval, any needed changes to Oregon Administrative Rules, or suggested legislation for consideration during a subsequent session.

Impact of Significant Legislative Changes

An overview of plan changes that have been approved over the years was compiled by Steve Rodeman, past director, who presented a "how we got to now" summary to the Senate Workforce Committee in February 2017:

- **Part 1 of PERS Background for Senate Workforce 2/1/17**
  http://oregon.granicus.com/MediaPlayer.php?clip_id=22267
  (click on the PERS bullet point below the video screen)
  Meeting Materials: https://olis.leg.state.or.us/liz/2017R1/Committees/SWF/2017-02-01-15-00/MeetingMaterials
- **Part 2 for Senate Workforce 2/6/17**
  http://oregon.granicus.com/MediaPlayer.php?clip_id=22311

Actuarial Information

One crucial aspect of the Board's work is to make decisions regarding the funding status of the Fund. The primary vehicle to do so is through work accomplished by the Board's actuary, currently Milliman. There are four primary actuarial reports/analyses that provide the Board the information necessary to make these decisions. They are shown in the order in which the Board works through each one of these, given that the results of these reports/analyses feed into the results of each in a linear fashion.

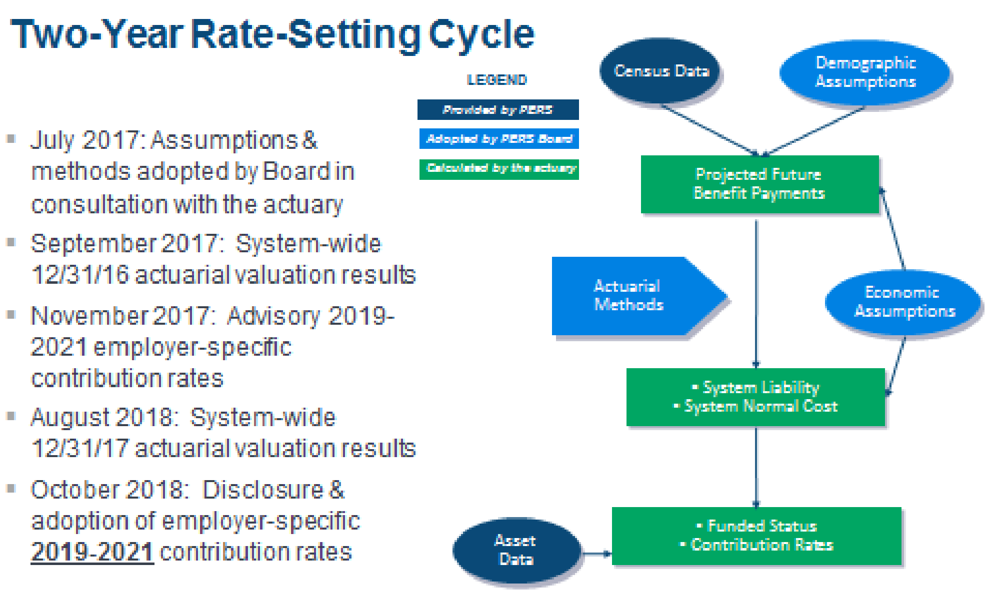
The Board has established a two-year cycle of doing actuarial valuations. The analysis and valuations done in an odd numbered year (i.e. 2017 with results as of December 31, 2016) are deemed to be "advisory" valuations, in that the results project out what the funding status is and what the employer rates may be for the next biennium. These results allow employers an opportunity to understand what their contribution rates may be in order to appropriately budget. In the even numbered years (i.e. 2018 with results as of December 31, 2017), the actuarial results are formally accepted by the Board and the next biennium's employer contribution rates are set based on those results.

From the August 3, 2018 Milliman presentation to the PERS Board:

Valuation Process and Timeline

- Actuarial valuations are conducted annually
  - Alternate between "rate-setting" and "advisory" valuations
  - The 12/31/2017 valuation is rate-setting
- The Board adopts employer contribution rates developed in rate-setting valuations, and those rates go into effect 18 months subsequent to the valuation date

Valuation Date	Employer Contribution Rates
12/31/2015 →	July 2017 – June 2019
12/31/2017 →	July 2019 – June 2021
12/31/2019 →	July 2021 – June 2023



The four primary actuarial reports are as follows:

1. **Overview of Actuarial Methods and Assumptions** (May 2019 Board meeting)
   On a bi-annual basis, the actuary presents a comprehensive view of what assumptions and methodologies were used in the previous actuarial valuation and how close the actual results were with respect to the assumptions. This is a precursor to having a discussion with the Board around what assumptions and methodologies may have to change in future valuations.
   https://www.oregon.gov/pers/Documents/2016-Exp-Study.pdf

2. **Approval of Actuarial Methods and Assumption including Assumed Rate Setting** (July 2019 Board meeting)
   In order to ensure that the Board has taken into account all appropriate external factors when doing an actuarial valuation, the actuaries take the Board through an actuarial assumption and valuation method setting exercise. This established the basis upon which an actuarial evaluation can be conducted.
   https://www.oregon.gov/pers/Documents/Valuation-Methods-and-Assumptions.pdf

3. **Actuarial Valuation Results and Employer Contribution Rate Setting (Advisory or Actual)** (October 2019 Board meeting)
   Based on the revised assumption set and methodologies, the actuary presents the Board with the actuarial results that shows the funded status of the plan (showing results with and without side accounts). It is the Board's responsibility to set employer contribution rates for each biennium (i.e. 2019-21). The actuary provides both a detailed analysis of each participating employer and the calculations that went into establishing their individual contribution rates, and also a summary of all 900+ employer contribution rates.
   http://www.oregon.gov/pers/EMP/Documents/2016_Actuarial_Valuation_Report.pdf

4. **Financial modeling** (December 2019 Board meeting)
   The actuary will test various data and assumptions to depict system funded status and employer rates into the future under steady and variable return models.

Budget Information

The agency operates on a two-year (biennial) budget, with the current budget going from July 1, 2017, to June 30, 2019. While the Board approves the agency's budget request to the Governor, as presented by the Director, there is a process whereby the Legislature, through the Ways & Means Committee and, ultimately, the Governor, approves the budget. This includes not only the operating and capital expenditures for that two-year period, but also the payments out of the Fund for ongoing pension payments, as well as termination disbursements. Staffing is also "managed" through a legislative process whereby the agency's staff complement are approved as part of the budgetary process and any subsequent shifts or classification changes must be approved by the Legislature on either a temporary or permanent basis.

Once approved, the agency provides a regular update to the Board on its financial position relative to the approved biennial budget. During the interim between legislative sessions, the agency has the ability to appear before budget committees to request additional funds to be able to appropriately resource (either funds or staff) unforeseen items that arise over the course of the biennium. Examples include changes to statutes that necessitate technology system changes or the need to hire staff to administer legislative directives on an ongoing basis.

Current 2017-2019 Budget and Past Budgets: https://www.oregon.gov/PERS/Pages/Financials/PERS-Budgets.aspx
As background, Director Steve Rodeman (2014-2018) presented the 2017-2019 Agency Budget Request to the General Government Subcommittee on Ways and Means in a series of meetings March 6-9, 2017. Materials for the presentations and bill (Senate Bill 5534) are available here:
https://olis.leg.state.or.us/liz/2017R1/Measures/Overview/SB5534

Videos are available below:

- March 6 - http://oregon.granicus.com/MediaPlayer.php?clip_id=22723
- March 7 - http://oregon.granicus.com/MediaPlayer.php?clip_id=22749
- March 8 - http://oregon.granicus.com/MediaPlayer.php?clip_id=22775
- March 9 - http://oregon.granicus.com/MediaPlayer.php?clip_id=22802

Comprehensive Annual Financial Report (CAFR)

The agency is required by statute to prepare, on an annual basis, a CAFR. It is a detailed report that provides the reader with an in-depth view of the financial status of the organization, as well as the Fund.

https://www.oregon.gov/pers/Documents/Financials/CAFR/2017-CAFR.pdf. At this time, PERS does not produce a Popular Annual Financial Report (PAFR), but will do so for the 2019 fiscal year.

Oregon Savings Growth Plan (OSGP)

PERS also administers the Oregon Savings Growth Plan (OSGP), a voluntary deferred compensation 457(b) program for state and local government employees. It is important to note there is an Advisory Committee that works with the staff who administer the OSGP. The Oregon Savings Growth Plan Advisory Committee (OSGPAC) is comprised of state, local government, and retired Oregon Savings Growth Plan representatives. The OSGPAC is responsible for having an overall understanding of the OSGP and advises the PERS Board on all aspects of the OSGP, including but not limited to:

- OSGP's fee structure and procedures.
- State and federal legislative issues relative to the administration of OSGP.
- Administration of the catch-up and the financial hardship provisions in Section 457 of the Internal Revenue Code.
- Ways and means to inform and educate eligible employees about OSGP.
- The expressed desires of eligible employees related to OSGP.
- The actuarial characteristics of eligible employees.

Additionally, when directed by the Oregon Investment Council (OIC), the OSGPAC shall study and advise the PERS Board on the following:

- Investment programs, including options and providers.
- Information furnished by the OIC or the State Treasurer concerning the types of available investments, the respective balance of risk and return of each investment, and the administrative costs associated with each investment.

More OSGP information can be found online at:
https://www.oregon.gov/pers/OSGP/Pages/index.aspx
https://growyourtomorrow.com

PERS Health Insurance Plan (PHIP)

PHIP offers health insurance coverage for retired members, their spouses, and dependents who meet the eligibility requirements. When planning their retirement, members are encouraged to review all health coverage options available to determine the best option for their families. PHIP contracts with four different health plans and two dental plans. All health plans include prescription drug coverage. In selecting a PHIP health plan, a member must maintain a permanent residence (not mailing address) within a health plan's service area and reside in the United States.

- Medicare:
  - PHIP requires all Medicare-eligible members and eligible dependents to be enrolled in both Medicare Parts A and B.
  - Medicare Supplement – Moda
  - Medicare Advantage (MA Plans) - Kaiser Permanente, Moda, PacificSource, Providence
- Non-Medicare:
  - PHIP offers HMO, POS, and PPO plans for non-Medicare participants. Retirees may select either the $500 deductible Core Value plan or the $1,000 deductible Select Value plan option.
  - Traditional HMO - Kaiser Permanente
  - HMO with deductible - Kaiser Permanente
  - POS – PacificSource
  - PPO - Moda, Providence
- Dental:
  - Members can enroll in either dental plan regardless of their medical plan selection. However, for Kaiser Permanente dental, members must reside in the Kaiser Permanente dental plan service area.
  - HMO - Kaiser Permanente
  - PPO - Delta Dental of Oregon

More PHIP information can be found online at:
https://www.oregon.gov/pers/RET/Pages/PHIP.aspx
https://www.pershealth.com/

Oregon Investment Council (OIC)

The Oregon Investment Council (OIC) is responsible for the investment of the Oregon Public Employee Retirement Fund (~$78.4 Billion as of 7/31/18). Periodically, there have been joint meetings between the OIC and the PERS Board to discuss items such as the interplay between the long-term assumed rate of return used in actuarial valuations and the assumed rate of return benchmark set by the OIC. As of 2018, the PERS long-term assumed rate of return is 7.2 percent, whereas the OIC benchmark rate of return is 7.1 percent.

https://www.oregon.gov/treasury/Divisions/Investment/Pages/Oregon-Investment-Council-(OIC).aspx
https://www.oregon.gov/treasury/Divisions/Investment/Pages/Oregon-Public-Employees-Retirement-Fund.aspx

PERS Stakeholders

Legislative Advisory Committee – Statute requires the PERS Board to act as policy advisor to the Legislative Assembly on legislative proposals for changes to PERS benefits. It also requires the Board to appoint a committee to advise the Board on those proposals. The committee must include an equal number of members representing labor and management.

Employer Groups: the following groups represent a significant majority PERS-participating public employers:

- Association of Oregon Counties
- League of Oregon Cities
- Oregon School Boards Association
- Special Districts Association of Oregon

PERS Coalition – Includes, but is not limited to, members from the following labor/union groups:

- Oregon State Fire Firefighters Council
- Service Employees International Union (SEIU)
- American Federations of State, County, and Municipal Employees (AFSCME)
- Oregon Nurses Association
- Oregon Education Association (OEA)

PERS Executive and Organizational Structure

The day-to-day agency activities are managed by the Director and the Executive Leadership Team. There is a Deputy Director as well as an Executive in charge of each division within the organization. Additionally, given the interplay between the agency and different legislative bodies, there is also a Senior Policy Director who reports directly to the Director.

The Director, appointed by the Board, is responsible for defining the organizational structure as well as the resourcing for the organization. The current organizational structure is under review (organizational chart and overview of each division to follow).

Bios of Executive Leadership Team:

Director – Kevin Olineck
kevin.olineck@state.or.us
503-603-7695
Kevin was appointed the Director of the Public Employees Retirement System (PERS) effective July 16, 2018. He is responsible for administration of the statewide retirement system serving more than 367,000 members, retirees and beneficiaries. Prior to joining PERS, Olineck was a senior executive with British Columbia Pension Corporation as well as Alberta Pension Services, two of the largest public sector pension administrators in Canada. Olineck holds a degree in Public Administration from the University of Saskatchewan, his Certified Employees Benefits Specialist (CEBS) designation, as well as his Institute of Corporate Governance, Directors (ICD.D) designation.

Deputy Director - Yvette Elledge-Rhodes
yvette.s.elledge@state.or.us
503-603-7685
Yvette Elledge-Rhodes currently serves as the Deputy Director at the Public Employees Retirement System (PERS), where she has worked for over 29 years. Yvette is passionate about ensuring that all PERS members are provided with first class service and is always looking for ways to improve the member experience. She is responsible for overseeing operations, including member and employer services, data and account management, and benefits; the project management office, strategic planning; as well as communications. Yvette serves on the Executive Leadership Team and has held a variety of positions at PERS. This breadth of experience gives her the ability to understand the agency from multiple perspectives and relate to myriad roles and directives. Originally from Hawaii, Yvette left the islands to attend Oregon State University where she received her Bachelor of Science degree.

Chief Information Officer - Jordan Masanga
jordan.masanga@state.or.us
503-603-7702
In his 15th year at Oregon PERS, Jordan Masanga is leading the agency in a digital transformation journey that will usher in new business capabilities and technology. As Chief Information Officer, Masanga leads a 70-person IT organization that manages and administers Oregon PERS. Prior to Oregon PERS, Masanga helped start up a company in the music industry and was VP of Engineering at ADC Telecomm Broadband Division, where he led an engineering organization consisting of five domestic and international offices. In total, Masanga has over 30

years of experience in software engineering and information technology. Masanga holds a Bachelor's degree in Computer Technology & Technical Communication from Bowling Green State University.

Chief Audit & Risk Officer – Jason Stanley
jason.m.stanley@pers.state.or.us
503-603-7504

Jason has served the state of Oregon for over 23 years. He started at PERS in 2006 as the Chief Audit Executive, overseeing the Internal Audit function for the agency. In 2015, Jason's role expanded to become the Chief Compliance, Audit, and Risk Officer. In addition to Internal Audit, he now also administers the Risk and Security Section, which is responsible for the Continuity Management Program and Information Security Program, and the Policy Analysis and Compliance Section, which is responsible for coordinating policies and rules and handling the agency's appeals and contested cases. Jason also oversees the State Social Security Program. He holds an accounting degree from Portland State University and is licensed as a Certified Public Accountant and Certified Fraud Examiner.

Chief Financial Officer – TBD

Senior Policy Director – Marjorie Taylor
marjorie.taylor@state.or.us
503-431-8902

Marjorie has navigated the legislative process in Oregon since 1997. She spent more than 10 years with the Oregon Legislative Assembly as non-partisan committee staff facilitating passage of legislation on a variety of topics. Before joining PERS in September 2012, Marjorie was the Legislative Coordinator at the Oregon Department of Administrative Services, interacting with all state agencies and the Governor's Office on bill drafting and analysis during sessions. At PERS, she communicates on a regular basis with employer and member stakeholder groups, the Governor's Office, legislative offices, and Board members about PERS proposals and member issues. Marjorie holds degrees in Geology and Earth Sciences from the University of Oregon and West Chester University of Pennsylvania.

Acting Chief Administration Officer – Louise Plata
louise.plata@state.or.us
503-603-7550

Louise was appointed the PERS Human Resource Manager on January 1, 2017. She is also responsible for managing the agency's human resource/human capital management program, which includes the following: recruitment; position and performance management; organizational development and training; wellness; succession planning/talent management; the diversity and inclusion program; and employee engagement. Prior to joining PERS, Plata was the Chief Operations Officer for a start-up, quasi-governmental agency in Wyoming. Responsibilities included oversight of the agency's onboarding program (employees as well as business partners), marketing and communications; procurement/contracts; technology, research and development; developing operational rules, policies and procedures; and reporting to external stakeholders (i.e., legislative committees; state agencies; governor's office and the board of directors). Plata has a degree in Business Management from the University of Phoenix.

PERS Mission Statement

We serve the people of Oregon by administering public employee benefit trusts to pay the right person the right benefit at the right time.

Shared Values

Honoring your public service through secure retirement benefits.

Core Values

Service-Focus
Accountability
Integrity

Operating Principles

Professional
Accurate
Judicious
Information Security

PERS Strategic Plan

PERS staff prepare, and the Board approves, a five-year strategic plan that sets out high-level goals and objectives on which the agency wants to deliver. The most recent plan was updated in 2018.
https://www.oregon.gov/pers/Documents/Strategic-Plan.pdf

PERS Outcome-Based Management System (POBMS)

PERS has developed an outcome-based management system to gauge its progress on Key Goals with defined Outcome Measures. Metrics on the outcome measures are reported to the Board twice a year, at the June and December Board meetings. The following is a link to the latest results:
https://www.oregon.gov/pers/Documents/Board-Meetings/2018/Board-Packet_6-1-18.pdf#page=14

Other Resources

- PERS by the Numbers:
  - https://www.oregon.gov/PERS/Documents/General-Information/PERS-by-the-Numbers.pdf
- State of Oregon Overview of Boards, Commissions & Small Entities Training Manual
  - https://www.oregon.gov/das/HR/Documents/BC.pdf
- Training/Education iLearn Access
  - https://www.oregon.gov/OGEC/Pages/training.aspx
- DAS - CHRO - Overview of Boards, Commissions, & Small Entities Training
  - https://ilearn.oregon.gov/contentdetails.aspx?id=03E988BBE99D4A3B8DFAFD8AC9E72FBA
- OGEC – Overview of Oregon Ethics Law
  - https://ilearn.oregon.gov/ContentDetails.aspx?id=9794EBA1E80C48A2BCE9C45F9F8275C1
- DAS - CHRO - Preventing Sexual Harassment Required Training
  - https://ilearn.oregon.gov/ContentDetails.aspx?id=FC303BA6BC29479DB7BACCEDB97EA343

Oregon

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October 5, 2018

TO: Members of the PERS Board

FROM: Stephanie Vaughn, Manager, Policy Analysis & Compliance Section

SUBJECT: Adoption of IAP Target Date Fund Rules:
OAR 459-007-0335, *Crediting Earnings for IAP Account Pre-Retirement Death Benefit Payments*
OAR 459-080-0015, *Investment of IAP Account Balance*

OVERVIEW

- Action: Adopt modifications to the IAP Target Date Fund rules.
- Reason: Address administration of IAP account of deceased non-retired members with Target Date Funds.
- Policy Issue: None.

BACKGROUND

A Target Date Fund (TDF) investment structure for IAP member accounts was adopted by the Oregon Investment Council on September 20, 2017. In order to implement the new TDF investment structure within a very compressed time period, we asked the PERS Board at the December 1, 2017 Board meeting for temporary rule adoption to be effective January 1, 2018. There were a total of five temporary rules up for adoption and five associated policy questions before the Board at the time.

One of the policy questions related to the administration of a deceased non-retired member's IAP account. At the December 1, 2017 Board meeting, PERS staff recommended and the Board adopted a policy that moved the non-retired member's IAP account balance to the Retirement Allocation Fund (RAF) upon notification of the member's death. After administering TDFs for a number of months and gathering more data, the TDF policy with regard to deceased, non-retired member accounts was altered.

With regard to deceased, non-retired members, staff determined that PERS needs verification of the member's death before moving the account to the RAF. Specifically, PERS needs to receive a death certificate. In processing these death accounts, it became apparent that there is typically little time between PERS' receipt of a death certificate and payment to the beneficiary.

IAP accounts in the TDFs receive only annual earnings crediting as of December 31 each year. In processing a beneficiary's application for benefits, staff will credit earnings to the member's account in the member's TDF from January 1 to the date of distribution. If any balance remains in the account at the end of that month (i.e. not all beneficiaries have been paid), the balance will be transferred to the RAF. Accounts in the RAF that are in payout status (i.e. retirement installments, and any other partially paid account) receive monthly earnings. When the remaining beneficiaries apply for their benefits, no additional processing will be required.

This adjustment in policy is reflected in the amendments to OAR 459-080-0015 and a new rule, OAR 459-007-0335, outlines the earnings crediting to these accounts.

SUMMARY OF MODIFICATIONS TO RULES SINCE NOTICE

No modifications were made to the rules.

PUBLIC COMMENT AND HEARING TESTIMONY

A rulemaking hearing was held August 28, 2018, at 2:00 p.m. at PERS headquarters in Tigard. No members of the public attended. The public comment period ended September 7, 2018, at 5:00 p.m. No public comment was received.

LEGAL REVIEW

The attached draft rules were submitted to the Department of Justice for legal review, and any comments or changes are incorporated in the rules as presented for adoption.

IMPACT

Mandatory: No.

Impact: Clarifies administration of pre-retirement death benefits.

Cost: There are no discrete costs attributable to the rules.

RULEMAKING TIMELINE

July 31, 2018	Staff began the rulemaking process by filing a Notice of Rulemaking with the Secretary of State.
August 1, 2018	Secretary of State published the Notice in the Oregon Administrative Rules Database. Notice was sent to employers, legislators, and interested parties. Public comment period began.
August 3, 2018	PERS Board notified that staff began the rulemaking process.
August 28, 2018	Rulemaking hearing held at 2:00 p.m. at PERS in Tigard.
September 7, 2018	Public comment period ended at 5:00 p.m.
October 5, 2018	Board may adopt the permanent rule modifications.

BOARD OPTIONS

The Board may:

1. Pass a motion to “adopt modifications to the IAP Target Date Fund rules, as presented.”
2. Direct staff to make other changes to the rules or explore other options.

STAFF RECOMMENDATION

Staff recommends the Board choose Option #1.

- Reason: Address administration of IAP account of deceased non-retired members with Target Date Funds.

If the Board does not adopt: Staff would return with rule modifications that more closely fit the Board's policy direction if the Board determines that a change is warranted.

B.1. Attachment 1 – 459-007-0335, *Crediting Earnings for IAP Account Pre-Retirement Death Benefit Payments*
B.1. Attachment 2 – 459-080-0015, *Investment of IAP Account Balance*

OREGON ADMINISTRATIVE RULE
PUBLIC EMPLOYEES RETIREMENT BOARD
CHAPTER 459
DIVISION 007 – EARNINGS AND INTEREST DISTRIBUTION

459-007-0335

Crediting Earnings for IAP Account Pre-Retirement Death Benefit Payments

(1) For the purposes of this rule, "monthly change rate" means the monthly earnings rate for IAP account(s) invested in the retirement allocation fund.

(2) When a beneficiary or beneficiaries receive(s) pre-retirement death benefit payments under ORS 238A.410, earnings will be credited in the manner specified in this rule.

(a) For payments made in the first month of distribution:

(A) If earnings for the calendar year before the date of distribution(s) have not been credited, earnings for that year shall be credited based on the member's target date fund's latest IAP year-to-date calculation available for that year.

(B) Earnings credited for the calendar year of distribution will be credited based on the member's target date fund's latest IAP year-to-date calculation as of the first day of the calendar month of the initial date of distribution.

(b) After the first month of distribution, any remaining account balance from a deceased non-retired member's IAP account will be moved to the retirement allocation fund. Earnings for the remaining account balance will be credited monthly using the latest monthly change rate beginning with the first of the month after the first month of distribution.

Stat. Auth.: ORS 238A.450

Stats. Implemented: ORS 238A.350 & 238A.410

OREGON ADMINISTRATIVE RULE
PUBLIC EMPLOYEES RETIREMENT BOARD
CHAPTER 459
DIVISION 080 – OPSRP INDIVIDUAL ACCOUNT PROGRAM

459-080-0015

Investment of IAP Account Balance

(1) Definitions. For the purposes of this rule:

(a) “Retirement allocation fund” has the same meaning as defined in OAR 459-007-0001(10).

(b) “Target date fund” has the same meaning as defined in OAR 459-007-0001(11).

(2) Each member’s IAP account balance will be invested in one of the target date funds based upon the member’s birth year**, except as provided in sections (4) and (5) of this rule**.

(3) Once PERS accepts as administrable a divorce decree that awards a portion of a non-retired member’s IAP account to an alternate payee, PERS will administer the decree accordingly and the alternate payee IAP account will be allocated to a target date fund based on the alternate payee’s birth year. PERS will allocate the alternate payee’s IAP account to the appropriate target date fund effective December 31 of the last closed year for earnings crediting, as of the date PERS administers the decree.

(4) When a retired member who elected IAP installment payments reestablishes active membership, the member’s IAP account balance and any new IAP contributions will be allocated in the retirement allocation fund.

(5) **Except as otherwise provided in this paragraph, a deceased non-retired member’s IAP account will be distributed from the member’s target date fund. Once the account has been processed for distribution, any balance that remains at the end of the month in which the first distribution is made will be allocated to the**

retirement allocation fund as of the first of the following month. All remaining distributions will be made from the retirement allocation fund. *[When PERS is notified of the death of a non-retired member, the deceased member's IAP account balance will be moved to the retirement allocation fund, effective December 31 of the last closed year for earnings crediting.]*

Stat. Auth.: ORS 238A.450

Stats. Implemented: ORS 238A.050 & OL 2018, Ch. 118

Oregon

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October 5, 2018

TO: Members of the PERS Board

FROM: Stephanie Vaughn, Manager, Policy Analysis & Compliance Section

SUBJECT: Adoption of Pooled Side Accounts for School District Employers Rule: OAR 459-009-0095, *Pooled School District Employers Side Account*

OVERVIEW

- Action: Adopt the Pooled Side Accounts for School District Employers Rule.
- Reason: Establish new rule addressing the administration of the pooled school district employers side account established under Senate Bill 1566 (2018).
- Policy Issues: *What amortization schedule should be implemented for the pooled school district employers side account?*

BACKGROUND

Senate Bill 1566 (2018) established a pooled school district employers side account and defines its revenue sources to include proceeds from excess debt collection, capital gains tax, estate taxes, and proceeds from unclaimed property. Funding for this side account may begin in January 2019.

The bill directs the Board to establish rules providing for proportional distributions from the new side account, as well as its amortization and general administration. The new rule specifies that the new pooled side account will be administered in the same manner as the individual employer side accounts, with modifications as needed to accommodate the nature of multiple employers in one side account.

POLICY ISSUE

What amortization schedule should be implemented for the pooled school district employers side account?

Staff engaged school district employers regarding the amortization period for the school district employers side account. Periods of 6-, 10-, 16-, and 20-years were considered. Generally, employer side accounts are amortized over 20 years. Based on the dates established in Senate Bill 1566 (2019) for the revenue sources, the fund will be receiving income through 2026. Staff surveyed the school district employers to determine their preference in amortization periods for the pooled side account. The results revealed a preference for a 20-year amortization period. A 20-year amortization period is consistent with how employer side accounts are currently administered, so it would not require any special administration or tracking.

Based on the input from employers and consistent administrative practices, the draft rule presented for adoption establishes a 20-year amortization period for the pooled school district employers side account.

PUBLIC COMMENT AND HEARING TESTIMONY

A rulemaking hearing was held August 28, 2018, at 2:00 p.m. at PERS headquarters in Tigard. No members of the public attended. The public comment period ended September 7, 2018, at 5:00 p.m. No public comment was received.

LEGAL REVIEW

The attached draft rule was submitted to the Department of Justice for legal review and any comments or changes are incorporated in the rule as presented for adoption.

IMPACT

Mandatory: Yes, Senate Bill 1566 directs the PERS Board to establish this rule.

Impact: Clarifies administration of the pooled school district employers side account.

Cost: There are no discrete costs attributable to the rule.

RULEMAKING TIMELINE

July 30, 2018	Staff began the rulemaking process by filing a Notice of Rulemaking with the Secretary of State.
August 1, 2018	Secretary of State published the Notice in the Oregon Administrative Rules Database. Notice was sent to employers, legislators, and interested parties. Public comment period began.
August 3, 2018	PERS Board notified that staff began the rulemaking process.
August 28, 2018	Rulemaking hearing held at 2:00 p.m. at PERS in Tigard.
September 7, 2018	Public comment period ended at 5:00 p.m.
October 5, 2018	Board may adopt the permanent rule modifications.

BOARD OPTIONS

The Board may:

1. Pass a motion to "adopt the Pooled Side Accounts for School District Employers rule, as presented."
2. Direct staff to make other changes to the rule or explore other options.

STAFF RECOMMENDATION

Staff recommends the Board choose Option #1.

- Reason: Establish new rule addressing the administration of the pooled school district employers side account established under Senate Bill 1566 (2018).

If the Board does not adopt: Staff would return with rule modifications that more closely fit the Board's policy direction if the Board determines that a change is warranted.

B.2.a. Attachment 1 - 459-009-0095, *Pooled School District Employers Side Account*

OREGON ADMINISTRATIVE RULE
PUBLIC EMPLOYEES RETIREMENT BOARD
CHAPTER 459
DIVISION 009 – PUBLIC EMPLOYER

459-009-0095

Pooled School District Employers Side Account

(1) Definitions as used in this rule:

(a) “Amortized amount” means the amount of a side account used to offset pension contributions due from the employer.

(b) “Pooled” or “pooling” means the combining or grouping of public employers participating in PERS for the purposes of determining employer liability for retirement or other benefits under ORS Chapter 238.

(c) “Pooled school district employers side account” means the side account created and funded under Section 24, Chapter 105, Oregon Laws 2018.

(d) “School district” means a common school district, a union high school district, or an education service district, including chartered schools authorized under Oregon law.

(e) “Side account” means an account in the Public Employees Retirement Fund into which a UAL lump-sum payment that is not used to satisfy a transition liability is deposited.

(2) Except as otherwise provided in this rule, the pooled school district employers side account will be administered in the same manner as an individual employer side account under ORS 238.229 and OAR 459-009-0084 through 459-009-0090.

(3) At each valuation, the PERS consulting actuary shall calculate for each school district employer, its share of the amortized amount from the pooled school

district employers side account based on each school district's covered salary, as a proportion of the school district rate pool covered salary, as reported in that actuarial valuation.

(4) For school district employers with no individual employer side account(s), the amount that is held in the pooled school district employers side account will be used to reduce the pension contributions that would otherwise be required from each of these school district employers. The amortized amount for each payroll reporting period shall be transferred from the pooled school district employers side account to the appropriate employer reserve accounts.

(5) For school districts with individual employer side account(s), the amount that is held in the pooled school district employers side account will be used only after all the employer's individual employer side account(s) have been used to reduce any remaining pension contributions that would otherwise be required from each of these school district employers. The amortized amount for each payroll reporting period shall be transferred from the pooled school district employers side account to the appropriate employer reserve accounts.

(6) The amortization period for the pooled school district employers side account is 20 years.

(7) Lump sum deposits into the pooled school district employers side account will not be eligible for matching funds from the Employer Incentive Fund.

Stat. Auth.: ORS 238.650 & OL 2018, Ch. 105

Stats. Implemented: ORS 238.225 - 238.229

Oregon

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October 5, 2018

TO: Members of the PERS Board

FROM: Stephanie Vaughn, Manager, Policy Analysis & Compliance Section

SUBJECT: Adoption of Employer Lump Sum Payments Rules:
OAR 459-009-0084, *Employer Unfunded Actuarial Liability Lump-Sum Payments With an Actuarial Calculation*
OAR 459-009-0086, *Employer Unfunded Actuarial Liability Lump-Sum Payments, Generally*

OVERVIEW

- Action: Adopt modifications to the Employer Lump Sum Payments rules.
- Reason: To allow employers who make lump sum payments of $10 million or more into a new side account to elect an alternate amortization schedule for that side account and to allow employer lump sum payments into side accounts to be considered for matching funds from the Employer Incentive Fund established under Senate Bill 1566 (2018).
- Policy Issues: None.

BACKGROUND

At the June 1, 2018 Board meeting, temporary rules were adopted and permanent rulemaking began addressing Section 3b of Senate Bill 1566 (2018), which allows participating PERS employers that make a lump sum payment of $10 million or more that is not sourced from pension obligation bonds the option to select an amortization period of 6, 10, 16, or 20 years for that payment.

Currently, employer side accounts are amortized over 20 years. With the option of selecting a different amortization period, employer lump sum payments made under this new provision will require the employer to establish a new side account with the different amortization period. As with all lump sum payments establishing a new side account, they will also require an actuarial calculation. Accordingly, OAR 459-009-0084 and 459-009-0086 have been amended to reflect this new option and clarify its administration.

At the August 3, 2018 Board meeting, additional amendments were introduced regarding the Employer Incentive Fund (EIF) established by Senate Bill 1566 (2018) to encourage employers to make additional one-time lump sum payments to pay down their UAL by matching qualifying lump sum payments. Employers have specifically asked if lump sum payments they make today can receive matching funds from the EIF. While staff continues to develop the program for the EIF, in order to remove a potential obstacle for employers wanting to make lump sum deposits, 459-009-0086 has been amended to allow employers who make lump sum payments under the current rule to apply to the EIF to have those funds matched under the program. Lump sum payments will still be subject to the existing requirements, and only lump sum payments or portions of lump sum payments that are deposited into new or existing side accounts would be eligible, as the EIF under Senate Bill 1566 (2018) does not include lump sum payments that are applied to a transition liability. All the standards and rules that will be established in implementing the EIF will apply equally to lump sum payments made before and after implementation of the program. The employer will still be required to apply to the EIF for matching funds and will not have any priority or guarantee of receiving matching funds. The amount that will be matched is the amount of the actual deposit into the new or existing side account.

SUMMARY OF MODIFICATIONS TO RULES SINCE NOTICE

No modifications were made to the rules.

PUBLIC COMMENT AND HEARING TESTIMONY

A rulemaking hearing was held August 28, 2018, at 2:00 p.m. at PERS headquarters in Tigard. No members of the public attended. The public comment period ended September 7, 2018, at 5:00 p.m. No public comment was received.

LEGAL REVIEW

The attached draft rules were submitted to the Department of Justice for legal review and any comments or changes are incorporated in the rules as presented for adoption.

IMPACT

Mandatory: No.

Impact: An opportunity for employers to elect an alternate amortization schedule for lump sum deposits of $10 million or more into a new side account and to budget and plan for their lump sum payment to PERS in anticipation of the start of the Employer Incentive Fund program under Senate Bill 1566 (2018).

Cost: There are no discrete costs attributable to the rules.

RULEMAKING TIMELINE

May 29, 2018	Staff began the permanent rulemaking process by filing a Notice of Rulemaking with the Secretary of State.
June 1, 2018	Secretary of State published the Notice in the Oregon Administrative Rules Database. Notice was sent to employers, legislators, and interested parties. Public comment period began.
June 1, 2018	PERS Board adopted the temporary rule modifications.
June 26, 2018	Rulemaking hearing held at 2:00 p.m. at PERS in Tigard.
July 6, 2018	First public comment period ended at 5:00 p.m.
July 31, 2018	Staff extended the rulemaking process by filing a second Notice of Rulemaking with the Secretary of State.

August 1, 2018	Secretary of State published the updated Notice in the Oregon Administrative Rules Database. Notice was sent to employers, legislators, and interested parties. Public comment period continued.
August 3, 2018	First reading of the rules.
August 28, 2018	Rulemaking hearing held at 2:00 p.m. at PERS in Tigard.
September 7, 2018	Public comment period ended at 5:00 p.m.
October 5, 2018	Board may adopt the permanent rule modifications.

BOARD OPTIONS

The Board may:

1. Pass a motion to "adopt modifications to the Employer Lump Sum Payments rules, as presented."
2. Direct staff to make other changes to the rules or explore other options.

STAFF RECOMMENDATION

Staff recommends the Board choose Option #1.

- Reason: Implement Employer Incentive Fund established under Senate Bill 1566 (2018).

If the Board does not adopt: Staff would return with rule modifications that more closely fit the Board's policy direction if the Board determines that a change is warranted.

B.2.b. Attachment 1 – 459-009-0084, *Employer Unfunded Actuarial Liability Lump-Sum Payments With an Actuarial Calculation*
B.2.b. Attachment 2 – 459-009-0086, *Employer Unfunded Actuarial Liability Lump-Sum Payments, Generally*

OREGON ADMINISTRATIVE RULE
PUBLIC EMPLOYEES RETIREMENT BOARD
CHAPTER 459
DIVISION 009 – PUBLIC EMPLOYER

459-009-0084

Employer Unfunded Actuarial Liability Lump-Sum Payments With an Actuarial Calculation

The words and phrases used in this rule have the same meaning given them in OAR 459-009-0086.

(1) An actuarial calculation is required before an employer may make a UAL lump-sum payment if the employer:

(a) Has a transition liability;

(b) Intends to establish a new side account with a new employer contribution rate as of a date specified by the employer; *[or]*

(c) Has requested an actuarial calculation where a calculation is not otherwise required**; or**

(d) Intends to make a UAL lump-sum payment as specified in OAR 459-009-0086(9).

(2) At least 45 calendar days before the date the employer intends to make a UAL lump-sum payment with an actuarial calculation, the employer must notify PERS Actuarial Services in writing that it intends to make such a UAL lump-sum payment. The notification must specify:

(a) The amount of the intended lump-sum payment;

(b) Whether it is a lump-sum payment pursuant to OAR 459-009-0086(9);

*[(b)]***(c)** *[No more than two]* **At least one** potential date*[s]* for the payment; and

*[(c)]***<u>(d)</u>** If the employer so elects, a specific effective date for the contribution rate change resulting from the UAL lump-sum payment. Such date must be the first of any month following the employer's intended payment date but may not be more than 12 months after the employer's intended payment date.

(3) PERS staff must notify the employer within five business days of receipt of a notification in section (2) of this rule if the notification is incomplete or the process cannot be completed by the earliest intended date of the UAL lump-sum payment.

(4) The PERS consulting actuary must provide an invoice charging the employer for the cost of the UAL calculation requested by the employer. At least 30 calendar days before the date the employer intends to make a UAL lump-sum payment, the employer must remit payment for the cost of the UAL calculation directly to the PERS consulting actuary according to the instructions on the invoice. Failure to remit payment according to the terms of this section may result in the PERS consulting actuary not completing the employer's UAL calculation by the proposed UAL lump-sum payment date.

(5) Upon receipt of notification that an employer has made payment in full for the requested UAL calculation, PERS staff shall request that the PERS consulting actuary calculate:

(a) For an employer participating in an employer actuarial pool, 100 percent of the employer's share of the UAL for the employer actuarial pool. This calculation will be:

(A) Based on the fair value UAL of the employer actuarial pool, from the most recent actuarial valuation;

(B) Based on the employer's covered salary, as a proportion of the pool, as reported in the most recent actuarial valuation; and

(C) Adjusted to reflect the effect of time from the most recent actuarial valuation to the intended date(s) of payment, using generally recognized and accepted actuarial principles and practices.

(b) For an employer not participating in an employer actuarial pool, 100 percent of the individual employer's UAL. This calculation will be:

(A) Based on the fair value UAL of the individual employer, from the most recent actuarial valuation; and

(B) Adjusted to reflect the effect of time from the most recent actuarial valuation to the intended date(s) of payment, using generally recognized and accepted actuarial principles and practices.

(c) For a UAL lump-sum payment to establish a new side account, the effect of the following UAL lump-sum payment amounts on the individual employer's contribution rates using the *[one or two potential dates for payment]* **information** specified by the employer in its notification in section (2) of this rule:

(A) 100 percent of the individual employer's UAL calculated in subsection (5)(a) or (b) of this rule;

(B) The UAL lump-sum payment amount**(s)** specified by the employer in its notification, if provided; and

(C) The minimum amount of the UAL lump-sum payment, if any.

(d) For a UAL lump-sum payment as specified in OAR 459-009-0086(9), the maximum lump-sum payment amount that will not result in a contribution rate of less than 0.00%, if the amount of the intended lump-sum payment specified by the

employer in subsection (2)(a) of this rule would in effect result in a surplus lump-sum payment as defined under OAR 459-009-0090(1)(g).

*[(d)]***(e)** For a UAL lump-sum payment into an existing side account, the estimated effect of the additional deposit on the individual employer's contribution rates effective July 1 of the year following publication of the actuarial valuation for the year in which the additional deposit is made.

(6) PERS staff must notify the employer in writing of the results of the individual employer's calculation in section (5) of this rule otherwise designated by the employer under subsection (2)(c) of this rule. In addition, PERS must send the employer a notification describing risks and uncertainties associated with the calculation of the individual employer's UAL if such notification has not already been provided.

(7) The employer must notify PERS Actuarial Services in writing at least three business days before making a UAL lump-sum payment. This notification shall be in addition to the notification in section (2) of this rule and must specify:

(a) The amount of the payment;

(b) The date the employer intends to make the payment;

(c) Whether the payment is to establish a new side account or to be deposited into an existing side account; and

(d) If the payment is to be deposited into an existing side account and the employer has more than one side account, which side account is to receive the deposit.

(8) For a UAL lump-sum payment to establish a new side account, PERS must receive the correct funds no later than five business days after the intended date of the UAL lump-sum payment specified by the employer in the notification described in

section (7) of this rule in order to adjust the employer contribution rate to that reported by PERS in section (6) of this rule.

(a) If the UAL lump-sum payment is received by PERS on or before the intended payment date specified in the notification described in section (7) of this rule or within the five business days following the intended payment date, the new employer contribution rate shall be effective for payrolls dated on or after:

(A) The first of the month following receipt of the UAL lump-sum payment by PERS; or

(B) The date specified by the employer in subsection (2)(c) of this rule, whichever is later.

(b) If the UAL lump-sum payment is received by PERS more than five business days after the intended payment date, the employer’s contribution rate shall be adjusted based on the next actuarial valuation after the date of receipt of the UAL lump-sum payment and effective July 1 of the year following publication of that valuation.

(c) If the UAL lump-sum payment received is other than any amount specified in the notification under section (7) of this rule, the employer’s contribution rate shall be adjusted to the rate the payment amount fully funds using the actuarial calculation in subsection (5)(c) of this rule.

(d) If the UAL lump-sum payment received is less than the minimum amount described in OAR 459-009-0086, the payment will be returned to the employer and no adjustment will be made to the employer contribution rate.

(9) When an employer makes a UAL lump-sum payment into an existing side account:

(a) The final rate adjustment from the additional UAL lump-sum payment(s) will be calculated in the actuarial valuation for the year in which the payment is made, and will be effective on July 1 of the year following publication of that valuation.

(b) The calculation in subsection *[(9)]*(a) of this section will supersede any estimate provided in an actuarial calculation under subsection (5)(d) of this rule.

(10) Nothing in this rule shall be construed to prevent the Board from:

(a) Adjusting employer contribution rates based upon the date of receipt of funds or errors in the notification described in section (7) of this rule; or

(b) Taking action pursuant to ORS 238.225.

Stat. Auth.: ORS 238.650

Stats. Implemented: ORS 238.225 - 238.229

OREGON ADMINISTRATIVE RULE
PUBLIC EMPLOYEES RETIREMENT BOARD
CHAPTER 459
DIVISION 009 – PUBLIC EMPLOYER

459-009-0086

Employer Unfunded Actuarial Liability Lump-Sum Payments, Generally

(1) Definitions. For the purposes of this rule:

(a) “Amortized amount” means the amount of a side account used to offset pension contributions due from the employer.

(b) “Employer actuarial pool” means a grouping of employers for actuarial purposes such as the School District Pool and the State and Local Government Rate Pool.

(c) “Fair value UAL” means the unfunded actuarial liability calculated using the fair market value of assets.

(d) “Side account” means an account in the Public Employees Retirement Fund into which a UAL lump-sum payment that is not used to satisfy a transition liability is deposited.

(e) “Transition liability” means the unfunded actuarial liability attributed to an individual employer for the period before entry into the State and Local Government Rate Pool.

(f) “Transition surplus” means the actuarial surplus attributed to an individual employer for the period before entry into the State and Local Government Rate Pool.

(g) “Unfunded actuarial liability” or “UAL” means the excess of the actuarial liability over the actuarial value of assets for the specified pension program.

(h) “UAL lump-sum payment” means any employer payment that is:

(A) Not regularly scheduled;

(B) Not paid as a percentage of salary;

(C) Made for the express purpose of reducing the pension contributions that would otherwise be required from the employer, or reducing or paying off the employer's transition liability; and

(D) Paid at the employer's election instead of at the PERS Board's direction.

(2) A UAL lump-sum payment must be made by either wire transfer or check payable to the Public Employees Retirement System.

(3) An employer may make a UAL lump-sum payment to pay 100 percent of its transition liability.

(4) A UAL lump-sum payment shall first be applied to the employer's transition liability, if any. The remainder of the payment, if any, shall be held in a side account.

(5) An actuarial calculation must be performed prior to an employer making a UAL lump-sum payment if the employer:

(a) Has a transition liability;

(b) Intends to establish a new side account with rate relief beginning on a date specified by the employer; or

(c) Requests an actuarial calculation where a calculation is not otherwise required.

(6) The amount of a UAL lump-sum payment that is held in a side account will be used to reduce the pension contributions that would otherwise be required from the employer making the UAL lump-sum payment. The amortized amount for each payroll reporting period shall be transferred from the side account to the appropriate employer reserve account.

(7) The minimum UAL lump-sum payment required to establish a new side account is the lesser of:

(a) 25 percent of the individual employer's UAL calculated under OAR 459-009-0084 or 459-009-0085; or

(b) $250,000.

(8) An employer with one or more existing side accounts may make additional UAL lump-sum payments into such side account(s).

(a) An employer may not make more than two additional UAL lump-sum payments per side account in a calendar year.

(b) Additional UAL lump-sum payments into an existing side account will not affect the amortization period of the existing side account.

(c) Adjustment to the employer's contribution rates from a UAL lump-sum payment into an existing side account will be effective on July 1 of the calendar year following completion of the actuarial valuation for the year in which the additional deposit is made.

(9) An employer making a UAL lump-sum payment equal to or greater than $10 million, not sourced from a pension obligation bond, and electing an amortization period of 6 years, 10 years, or 16 years must establish a new side account for the lump-sum payment.

*[(9)]***(10)** Each employer side account shall be charged an administration fee of $1,500 for the year in which the side account is established, and $500 per year thereafter.

*[(10)]***(11)** Side accounts shall be credited with earnings and losses in accordance with OAR 459-007-0530.

*[(11)]***(12)** Nothing in this rule shall be construed to prevent the PERS Board from taking action pursuant to ORS 238.225.

*[(12)]***(13)** Nothing in this rule shall be construed to convey to an employer making a UAL lump-sum payment any proprietary interest in the Public Employees Retirement Fund or in the UAL lump-sum payment made to the fund by the employer.

(14) Employers making lump-sum payments into employer side accounts under this rule on or after June 2, 2018, will be eligible to apply to have those payments matched by the Employer Incentive Fund provided under sections 1 and 2, chapter 105, Oregon Laws 2018 according to the conditions established by the Board under that program.

Stat. Auth.: ORS 238.650

Stats. Implemented: ORS 238.225 - 238.229

Oregon
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October 5, 2018

TO: Members of the PERS Board

FROM: Marjorie Taylor, Senior Policy Director

SUBJECT: Legislative Advisory Committee and Legislative Updates

PERS LEGISLATIVE ADVISORY COMMITTEE

ORS 238.660(9) allows the PERS Board to act as policy advisor to the Legislative Assembly on legislative proposals for changes to PERS benefits. ORS 238.660(10) requires the Board to appoint a committee to advise the Board on those proposals. The committee must include an equal number of members representing labor and management. In preparation for the 2019 legislative session, staff requests that the Board confirm membership of the Legislative Advisory Committee (LAC).

RECOMMENDED APPOINTMENTS

The proposed membership is balanced between labor and management representatives, and includes members who participated in previous LAC meetings. Members have been contacted and are willing to serve on the committee.

Name	**Representing**
Joe Baessler	American Federation of State, County and Municipal Employees
Rob Bovett	Association of Oregon Counties
Jack Dempsey	Oregon Nurses Association/Oregon Association of Corrections Employees
Bob Livingston	Oregon State Fire Fighters Council
Jared Mason-Gere	Oregon Education Association
Lori Sattenspiel	Oregon School Boards Association
Cameron Smith	Oregon Department of Consumer and Business Services
Melissa Unger *(may be replaced by designee)*	Service Employees International Union
Scott Winkels	League of Oregon Cities
Hasina Wittenberg	Special Districts Association of Oregon

BOARD OPTIONS:

The Board may:
1. Approve the recommended appointments, effective immediately.
2. Direct staff to solicit different or additional candidates for appointment.

Staff Recommendation:

Staff recommends the Board choose Option #1.

SEPTEMBER LEGISLATIVE DAYS

Due to a Special Session on May 21, 2018, a variety of agency budget requests and presentations were deferred from the May 21-23 to the September 24-26 Legislative Days. PERS filed two requests with the Emergency Board: 1) technical adjustments to division budgets that do not impact position count, FTE or agency limitation; and 2) an Accountant 4 position to support the accounting and reporting of the Target Date Fund (TDF) investment structure of the Individual Account Program (IAP).

PERS also had an opportunity to present a report to the Joint Legislative Committee Information Management and Technology regarding the status of the PERS Information Security Program (ISP) and the Continuity Management Program. We will submit a request to the December Emergency Board for positions and funding associated with our security and risk programs.

AGENCY LEGISLATION – 2019 SESSION

The 2019 legislative session will begin January 22 and the constitutional deadline to adjourn is June 30. An organizational session is planned for January 14-16, 2019 for the purpose of swearing in members and bill introduction. We may have a preview of some legislation by mid-December, but our bill review process will intensify in January.

For discussion during the 2019 session, PERS expects to request pre-session filing of one agency bill to resolve implementation issues with Senate Bill 1566(2018). The bill, approved in March, established the Employer Incentive Fund (EIF), the Unfunded Actuarial Liability Resolution Program (UALRP), and the School Districts Unfunded Liability Fund. Revenue sources for the two new funds were defined in Senate Bill 1566 or Senate Bill 1529(2018).

The agency-requested Legislative Concept will propose to do the following:

1) Eliminate the requirement in Section 2(3)(a) which restricts the Board to open the EIF application window only after making a determination of sufficient funds in EIF.
2) Narrow the initial EIF application window for employers with UAL exceeding 200 percent of payroll from 180 days to 90 days. See Section 2(3)(b)-(c).
3) Allow the Board to approve EIF applications as long as projected moneys in EIF are available and establish a “wait list” for employers who have submitted timely applications, but for whom funds are not available. If previously allocated funds become available, employers on the wait list will be given access to them.
4) Require employers make qualifying lump sum payment no later than September 30, 2021. This allows the deposits to be reflected in an actual rate setting system valuation. See Section 2(2)(c)(B).
5) Limit participation in the UALRP to only those employers who apply for EIF matching funds.
6) Repeal the UALRP on January 2, 2025 to coincide with the end date for the EIF.
7) Allow earnings on the corpus of EIF to be used to match qualifying employer payments.
8) Clarify when certain revenue streams will be deposited into the School District Fund.

A final draft of the Legislative Concept will be available for approval at the December 7 Board meeting.

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Kate Brown, Governor

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October 5, 2018

TO: Members of the PERS Board

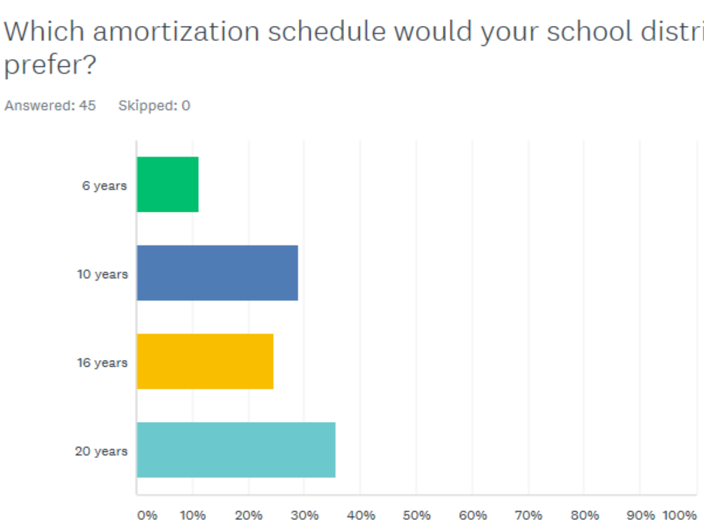
FROM: MaryMichelle Sosne

SUBJECT: Senate Bill 1566: School District Unfunded Liability Fund Amortization Schedule

BACKGROUND

Senate Bill 1566 establishes two funds and two additional programs to assist public employers with managing employer contributions and providing options to assist with long-term budgeting. Section 24 of Senate Bill 1566 establishes the School Districts Unfunded Liability Fund, separate and distinct from the General Fund. The School Districts Unfunded Liability Fund is a pooled side account that will provide rate relief to all public school districts, public charter schools, and education service districts. This fund will be capitalized through excess earnings from debt collection, estate and capital taxes as well as interest from unclaimed property. Inclusion in the fund is automatic for all eligible groups.

As described in Section 24(4)(b) of the bill, the PERS' Board shall adopt rules providing for the amortization of the money moneys distributed. When possible, PERS seeks to collaborate with impacted parties on issues that will impact them, PERS surveyed all eligible groups to determine which amortization schedule they preferred: 6-years; 10-year; 16-years; or 20-years. The survey closed on September 17, 2018 and the majority opted to maintain the current 20-year amortization schedule:



BOARD OPTIONS

The Board may:

1. Pass a motion to adopt the 20-year amortization schedule selected by a majority of survey participants.
2. Select a different amortization schedule of 6-, 10- or 16-years.

STAFF RECOMMENDATION

Staff recommends the Board choose Option #1.

- Reason: The 20-year amortization schedule reflects the decision of parties impacted by this decision.

If the Board does not adopt: A lower amortization schedule reduces the potential contribution reduction for employers.

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October 5, 2018

TO: Members of the PERS Board

FROM: MaryMichelle Sosne

SUBJECT: Senate Bill 1566: Employer Incentive Fund

OVERVIEW

- Action: None, this is informational, further action may be requested at the December 7, 2018 Board Meeting
- Reason: Outline application process for Employer Incentive Fund

BACKGROUND

Senate Bill 1566 establishes two funds and two additional programs to assist public employers with managing employer contributions and providing options to assist with long-term budgeting. Senate Bill 1566 establishes the Employer Incentive Fund that will provide up to a 25% match of an employer's qualifying UAL lump-sum payment. Per Senate Bill 1566, once the fund is sufficiently capitalized, the PERS Board can begin accepting applications in the order they are received until the fund is depleted.

IMPLEMENTATION ACTIVITIES

- PERS is working on a draft, and will request approval, of a 2019 Legislative Concept to fix several conflicts recognized in Senate Bill 1566.
- PERS is finalizing the EIF application process now to allow for a quick response time once fund capitalization issues are resolved.
    - The application process will occur through the PERS Employer website and submit automatically to an email repository, this will allow PERS to ensure applications are approved as they are submitted
    - The application process will be overseen primarily by the Actuarial Services team and supported by the Employer Service Center
    - The Employer Rate Relief website will be updated with a separate page for the Employer Incentive Fund to provide more in-depth information to Employers.

The final application and approval process will be presented to the Board during at the December 7, 2018 Board Meeting.

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October 5, 2018

TO: Members of the PERS Board
FROM: Elizabeth Rossman and Dean Carson, PERS Communications Section
SUBJECT: 2018 Member & Employer Satisfaction Survey Results

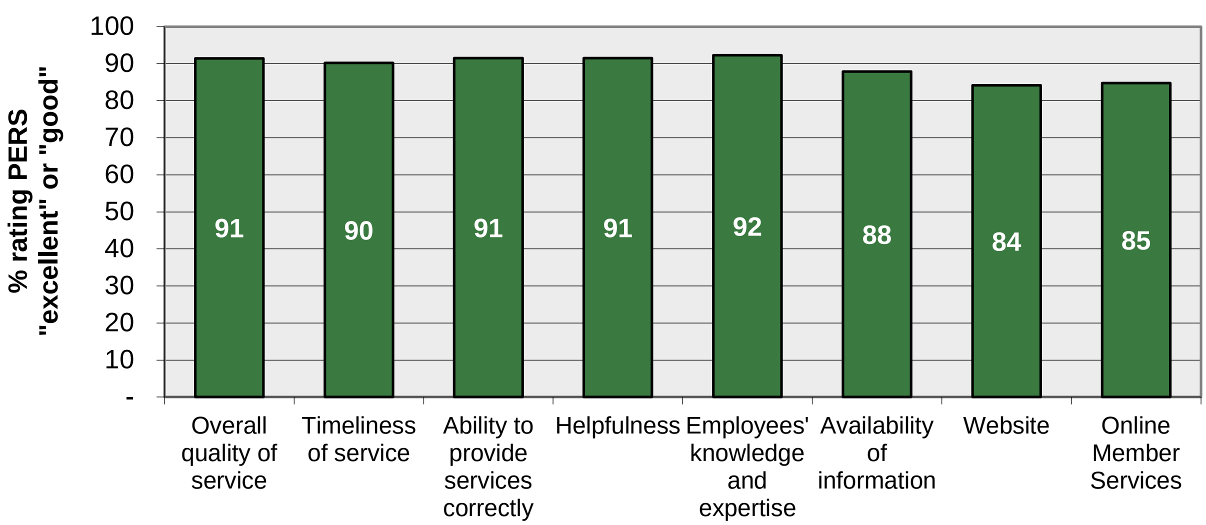
PERS conducted annual satisfaction surveys for members (non-retired and retired) and employers in August 2018. In 2005, the legislature required all agencies to survey for standardized customer service performance measures and report results in their budget presentations. PERS' 2018 results show a measured increase in satisfaction from members since last year.

MEMBER SATISFACTION SURVEY

After making enhancements to the 2017 survey, including a redesign to gain better communications insights and concerted efforts to increase non-retired member participation, PERS further refined the survey in 2018 to better pinpoint the gaps in member needs. Results show a significant improvement since last year. Thanks to PERS' use of GovDelivery, we also increased both the total number of responses and the percentage of responses coming from non-retired members, which will support our ongoing efforts to better engage and communicate with our members.

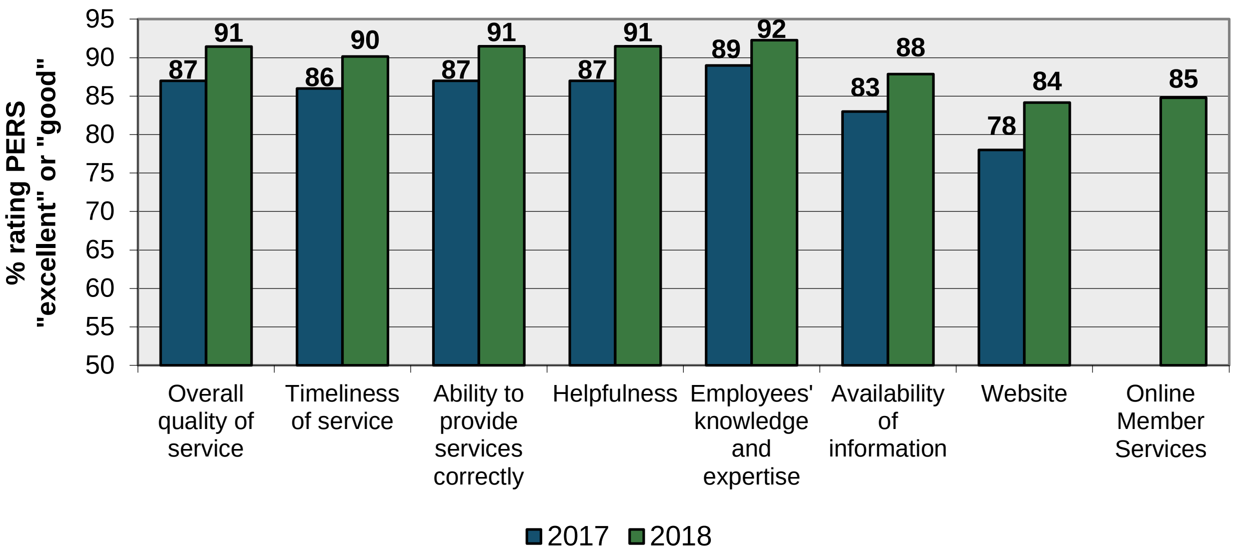
In 2017, we received 4,642 responses (24.3 percent from non-retired members). In 2018, we received 7,682 total responses: 2,202 non-retired members (28.6 percent) and 5,480 retirees. PERS achieved this by emailing 25,000 people who had opted into a GovDelivery notice when the survey went live on August 1, and then sending a reminder message to 13,000 people who didn't click on the first email, a week before the survey closed. The survey link was in member newsletters and on the PERS website. Hard copies of the survey were included in the retiree newsletter.

2018 MEMBER SATISFACTION RATINGS

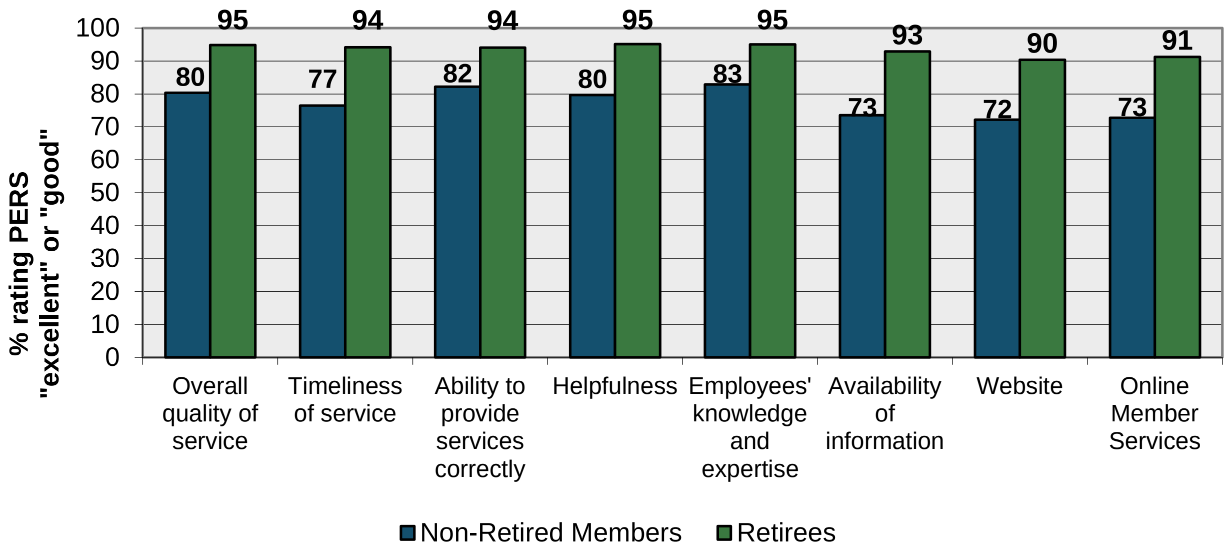


State measures do not include "Don't Know." Results have been re-baselined to exclude those responses.

COMPARISON OF 2017-2018 MEMBER RESULTS



COMPARISON OF 2018 NON-RETIRED VS. RETIRED MEMBER RESULTS



Except for “employees’ knowledge and expertise” (3.25 percent overall increase), combined satisfaction ratings increased by over four percent since last year, even with much larger response rates. The significant increases in “availability of information” and website ratings may be linked to continued communications improvements, such as the launch of topic-specific GovDelivery emails that began in August 2017, and with members becoming more familiar with the PERS website that was refreshed in April 2017. Timeliness of service, availability of information, and online resources continue to show a need for further improvement, especially among non-retired members. A rating for Online Member Services (OMS) was also added in 2018 to differentiate member feedback on the Oregon.gov/PERS website versus members’ online account access.

Comparison data in this memo only includes 2017 and 2018 results, given that 2016 and earlier surveys had fewer than 2,000 total responses, and primarily reflected retiree satisfaction ratings.

KEY MEMBER ISSUES AND SUGGESTIONS

Over 1,500 members included comments on the survey. Some main issues shared were as follows:

1. Call wait times

PERS call volume has continued to increase year-to-year, with a 10 percent increase in total call volume last assessed between 2016 and 2017. Between August 2017 and July 2018, the period since the last satisfaction survey, the Member Information Center (MIC) had a nearly 18-minute average call wait time. The MIC also worked to fill vacant positions during this time period. While many members expressed positive feedback about their service when speaking with a call agent, they were not satisfied with the time they had to wait on hold, especially during high-volume call periods such as the beginning of the month, during tax season, or when the Legislature was in session.

Resolution:

The MIC continues to explore new technologies to improve the member experience and, as of September 2018, is almost at full capacity. The on-boarding process for call agents is lengthy, given the broad, detailed knowledge required to respond to member calls. We did notice a decrease in average call wait times in the past few months after a new cohort of agents completed training; we hope this trend will continue as more recently hired agents finish the on-boarding process. The MIC's comprehensive knowledge database and robust training continues to lead to more timely, accurate, and consistent call resolutions. We also recognize that communications and technology improvements in other areas of PERS (e.g., possible website or estimate processing improvements) could lead to fewer people needing to call the MIC to understand their benefits or resolve issues.

2. PERS Website

After negative website feedback on the 2017 survey (the website was rated "excellent" or "good" by 58 percent of non-retired members and 87 percent of retirees; 78 percent overall), we added a new rating for Online Member Services (OMS) in the 2018 survey, since many comments had mentioned online account access issues. While satisfaction ratings for the website increased this year (likely due in part to some members gaining familiarity with the redesigned site), there were still numerous comments on navigation challenges and the inability to easily access member-specific retirement details (such as having to go to a separate website for IAP information). Website navigation and content issues also drove more people to call into the MIC for assistance.

Resolution:

We continue to work toward long-term plans to modernize OMS to give members better access to more actionable retirement planning information. Recognizing the need for ongoing feedback from members, we added a new question to the 2018 survey, giving members an opportunity to leave their contact information for future focus groups. When PERS moves to the latest state website templates, we will seek input from some of these 1,800+ members to make sure the next redesign is more member-centric and designed with a focus on usability.

3. Timeliness for estimate requests

PERS processed nearly 19,000 written benefit estimates (not including divorce-related estimates) between July 2016 and June 2018, processing straightforward estimates in an average of 67 days. In the last six months, average processing time has improved, down to 47 days, but members with a divorce, or a more complex account, have expressed frustration with estimates taking longer than the average.

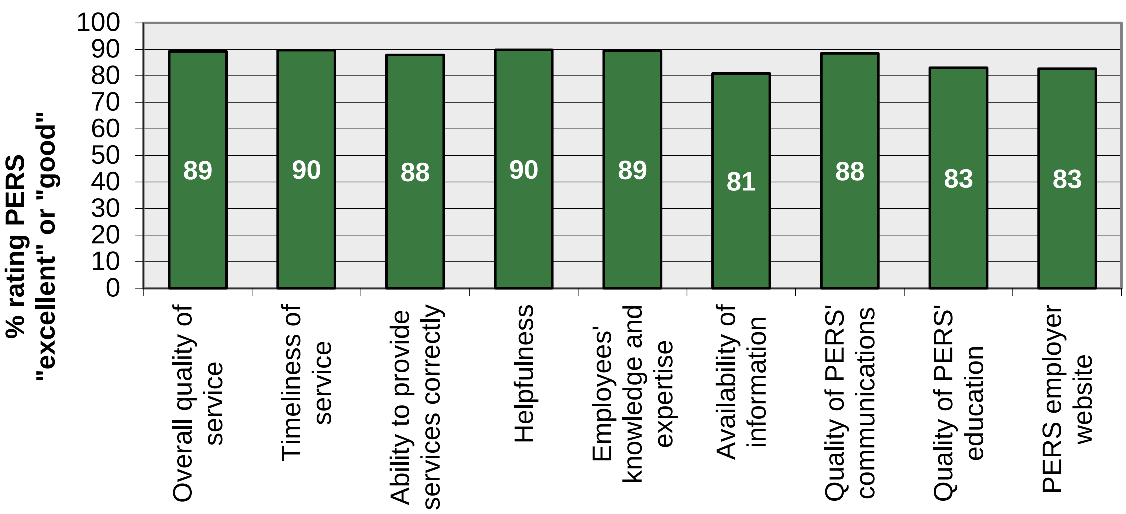
Resolution:
PERS needs to communicate more effectively with members to both set expectations about the average time that it takes to complete most estimates (even though every account is different) and share updates, when possible, about the status of estimate processing. PERS is updating its form receipt auto-email system to add form-specific information, such as specifying the order in which estimates are processed. The Estimates Team is also researching process improvements and new communication channels to update members whose estimate is delayed or still being calculated. We are also adding more transparent information to the PERS website acknowledging average processing times and noting that divorce-related estimates take longer.

EMPLOYER SATISFACTION SURVEY
This was the twelfth year we surveyed employers on a variety of topics. The 2018 employer satisfaction survey was sent to our employer email listserv and posted on the PERS employer website in August 2018; employers also received reminder emails encouraging participation. This year we made an effort to seek feedback not only from payroll specialists and EDX reporters, but also other human resources staff, financial officers, and agency heads, for a broader sample of input on employer satisfaction outside of data reporting. We received 320 responses, with 200 from payroll specialists. For comparison, we received 274 total responses in 2017, with a similar breakdown.

To gain further insights on PERS employer communications, we added new ratings in 2018 to track the quality of PERS' education to employers and the PERS employer website, rather than only the overall quality of PERS' employer communication. We also added new questions to better understand what training or website improvements would be most helpful. Results show a need for increased attention to these areas.

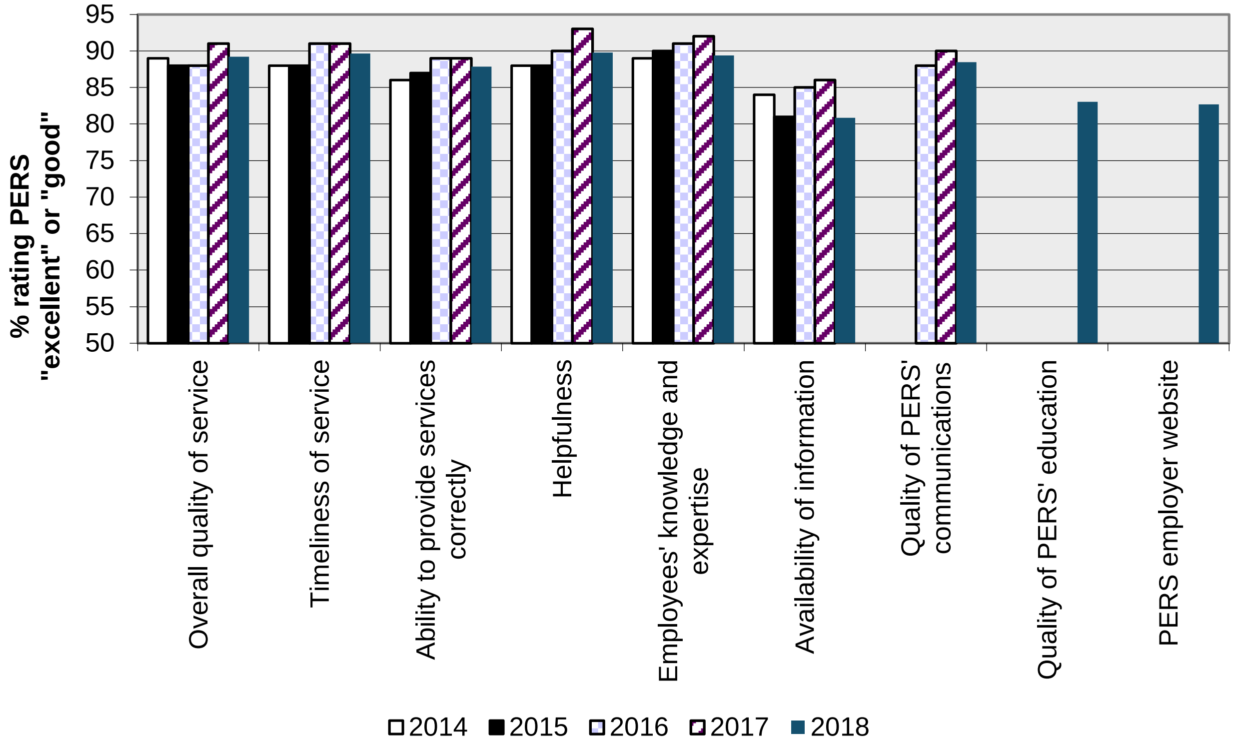
Slightly lower overall satisfaction ratings in 2018 could be impacted by the small sample size, as well as receiving more targeted feedback from non-payroll staff at PERS-participating employers.

2018 EMPLOYER SATISFACTION RATINGS



State measures do not include "Don't Know." Results have been re-baselined to exclude those responses.

COMPARISON OF 2014-2018 EMPLOYER RESULTS



KEY EMPLOYER ISSUES AND SUGGESTIONS

1. Employer statements

Over 50 percent of employers commented that additional education or training to understand employer statements (invoices from PERS) would be helpful. Employer statements are not user-friendly, and many employers have a hard time easily interpreting the information they need. Because EDX reporters and financial officers often need different information from the same employer statements, there is also confusion around topics such as employers' Unfunded Actuarial Liability (UAL) and side accounts. Lastly, due to the static format of employer statements, many employers lack the ability to easily reconcile data on their end.

Resolution:

The PERS Employer Service Center (ESC) is researching technology improvements to explore whether other formats are possible for employers to receive and manipulate employer statements. We plan to gather feedback from the Employer Advisory Group on what changes are needed. In addition, thanks to a new, increased partnership between the PERS Actuarial Services section and the ESC, better knowledge sharing and cross-training will also improve communication and training for employers. We will work to make sure all employers, no matter their role, either understand the key information about their UAL or side accounts, or know how best to find answers to their questions.

2. PERS employer website

After the entire PERS website was refreshed in April 2017, employers continue to struggle with navigation, which impacts their ability to find key topics on the PERS employer web pages.

Resolution:
In addition to adding a new question on the 2018 employer survey to gather feedback on website navigation challenges, the ESC, due to their increased familiarity with the site, has gained a better understanding of how the employer home page can be reorganized to ensure employers can find what they need. We believe we can make changes to naming conventions for some of the commonly used sections on the employer website, using terms that are more familiar to employers. There could also be value in further focus group insights, in partnership with the Employer Advisory Group, to continuously improve the PERS employer website pages.

Oregon

Kate Brown, Governor

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October 5, 2018

TO: Members of the PERS Board

FROM: Debra Hembree, Actuarial Services Coordinator

SUBJECT: 2019-21 Individual Employer Rate Adoption

OVERVIEW

On October 5, 2018, Milliman actuaries Matt Larrabee and Scott Preppernau will present recommended 2019-21 individual employer rates for Board approval. These recommended rates are based on the December 31, 2017 Valuation and, if approved, will be in effect for all PERS-covered payrolls dated July 1, 2019 through June 30, 2021. Milliman presented system-wide 2017 valuation results at the August 3, 2018 Board meeting.

The recommended rates as calculated in the December 31, 2017 Valuation are lower for most employers than the advisory rates calculated in the December 31, 2016 Valuation. This is due to 2017 investment returns being much higher than the assumed rate, which improved funded status for the system, both actuarial pools, and most independent employers. However, employers will still see significant increases in their contribution rates for 2019-21, and again in 2021-23, due mainly to the rate collaring methodology, which defers large rate increases into future biennia.

STAFF RECOMMENDATION

State statute, ORS 238.225, directs the PERS Board to set employer contribution rates so that they will adequately fund system liabilities.

Staff recommends that the Board approve the 2019-21 individual employer contribution rates as recommended by the PERS actuary. Adoption of the proposed rates complies with the Board's rate-setting principles and fulfills its statutory obligation to set employer rates for the 2019-21 biennium.

PERS Board Meeting

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

Presented by:
Matt Larrabee, FSA, EA
Scott Preppernau, FSA, EA

October 5, 2018

Introduction

- At the August meeting we reviewed summary valuation results as of December 31, 2017 for:
  - Tier 1/Tier 2 & OPSRP retirement programs
  - Retiree Health Insurance Account (RHIA), and
  - Retiree Health Insurance Premium Account (RHIPA)
- In September, we published our full detailed December 31, 2017 System-Wide Actuarial Valuation Report
- Based upon that valuation, at today’s meeting we are presenting 2019-2021 employer contribution rates for proposed adoption by the PERS Board
- PERS staff will provide detailed reports for each employer

Valuation Process and Timeline

- Actuarial valuations are conducted annually
  - Alternate between “rate-setting” and “advisory” valuations
  - The 12/31/2017 valuation is rate-setting
- The Board adopts employer contribution rates developed in rate-setting valuations, and those rates go into effect 18 months subsequent to the valuation date

Valuation Date	Employer Contribution Rates
12/31/2015 →	July 2017 – June 2019
12/31/2017 →	July 2019 – June 2021

Funded Status & Unfunded Actuarial Liability (UAL)

- Comparison of most recent two rate-setting valuations

Valuation Date	Excluding Side Accounts		Including Side Accounts	
	UAL	Funded Status	UAL	Funded Status
12/31/2015	**$21.8**	**71%**	**$16.2**	**79%**
12/31/2017	**$22.3**	**73%**	**$16.7**	**80%**

Summary of Valuation Results - Contributions

- Uncollared pension-only contribution rates fairly flat from 17-19 to 19-21

Downward Uncollared Rate Pressure	Upward Uncollared Rate Pressure
• 2017 actual investment return	• Lower assumed return
• Transfer from Contingency Reserve	• Collared rates < uncollared rates
• OPSRP replace Tier 1 / Tier 2 members	• Payroll growth 1% below assumed

- Collared pension rates had another systematic increase from 17-19 to 19-21
  - From slide 22 of August presentation, biennial pension contributions (collared net rates) projected to go from $2.88 billion in 17-19 to $3.97 billion in 19-21, an estimated increase of $1.09 billion
- Projected biennial contributions for RHIA decrease by $86 million

School District Weighted Pension-Only Rates

Rates for **2009-2011** set **prior to economic downturn**

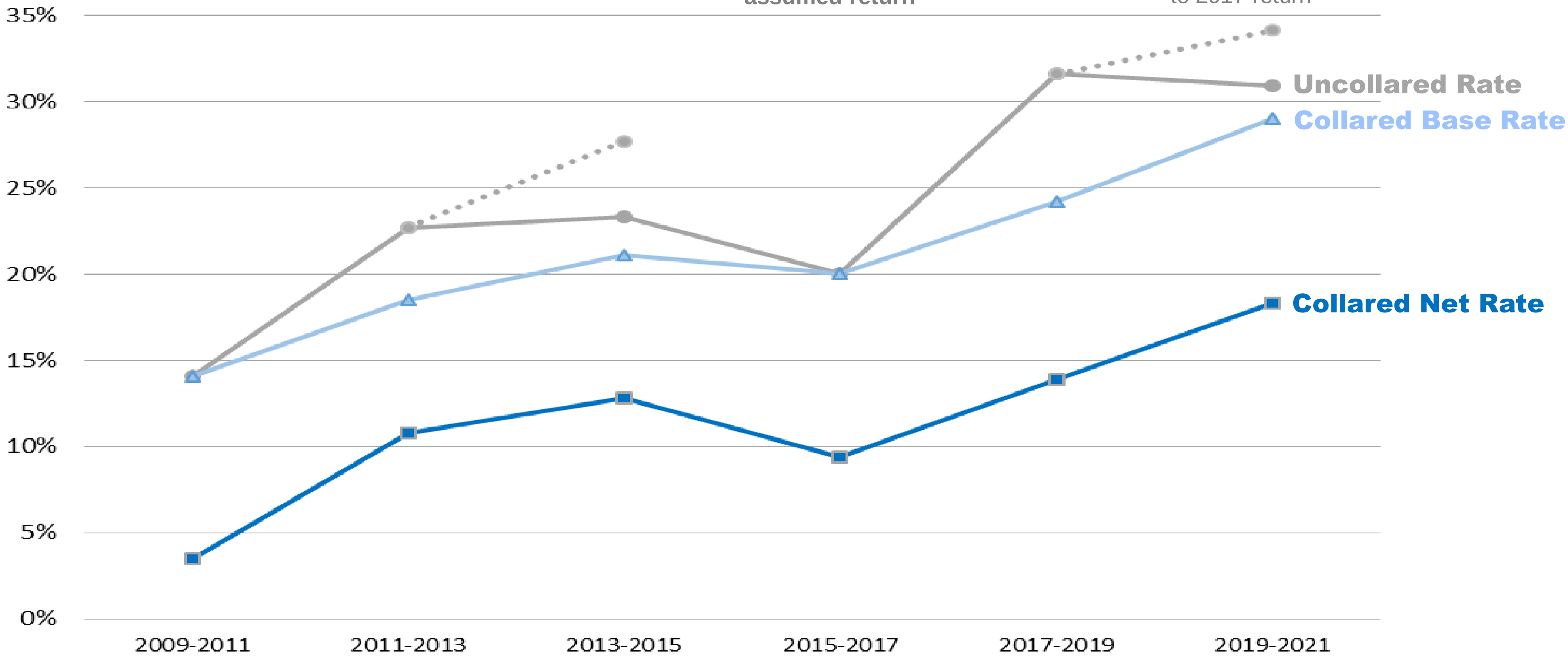
2011-2013 rates first to reflect **-27%** return in 2008

2013-2015 shown before (dotted line) and after (solid line) **legislated changes**

2015-2017 set **pre-*Moro*** reflecting 2012 (**+14.3%**) & 2013 (**+15.6%**) returns, first **decrease in assumed return**

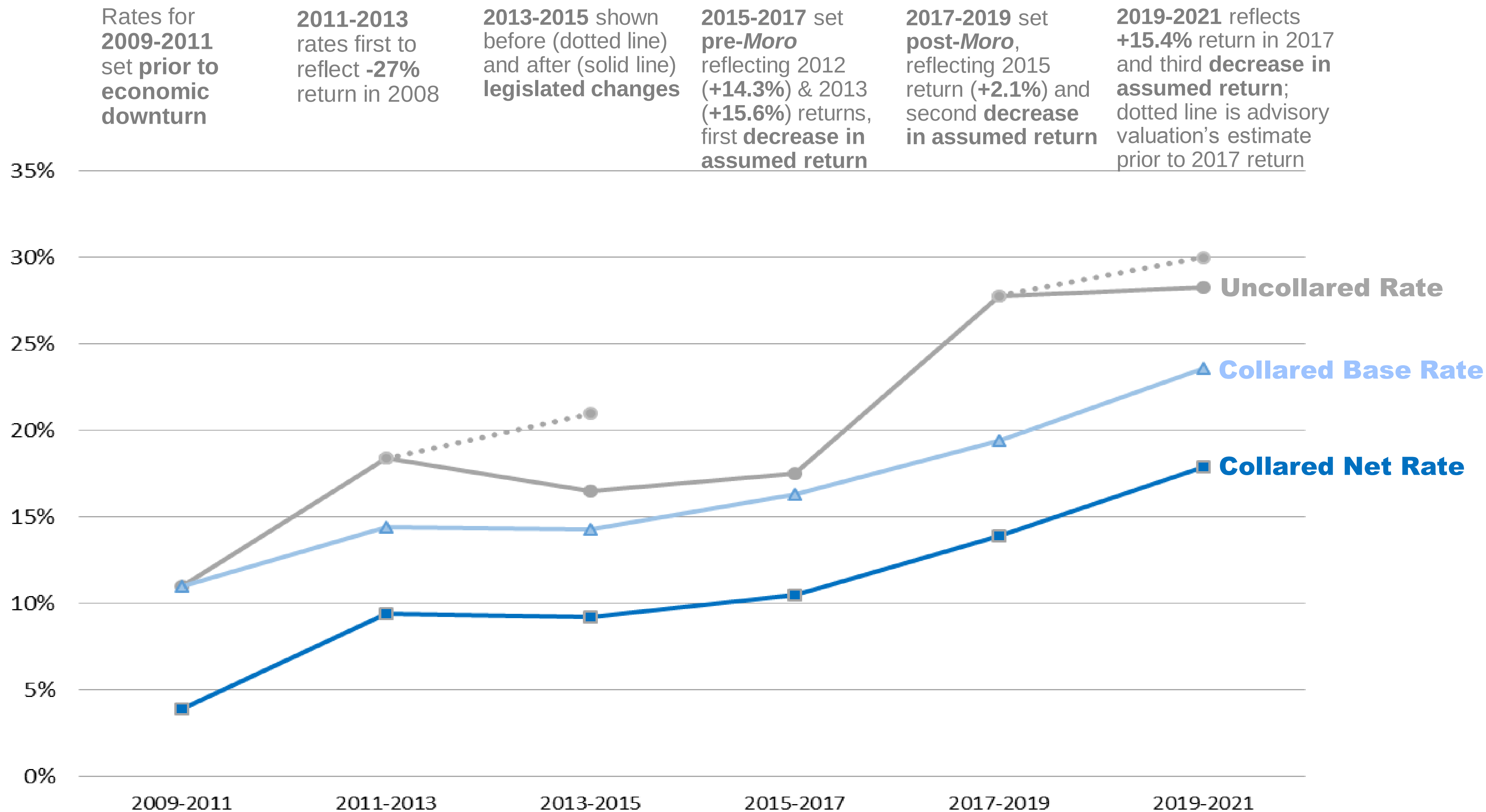
2017-2019 set **post-*Moro***, reflecting 2015 return (**+2.1%**) and second **decrease in assumed return**

2019-2021 reflects **+15.4%** return in 2017 and third **decrease in assumed return**; dotted line is advisory valuation's estimate prior to 2017 return



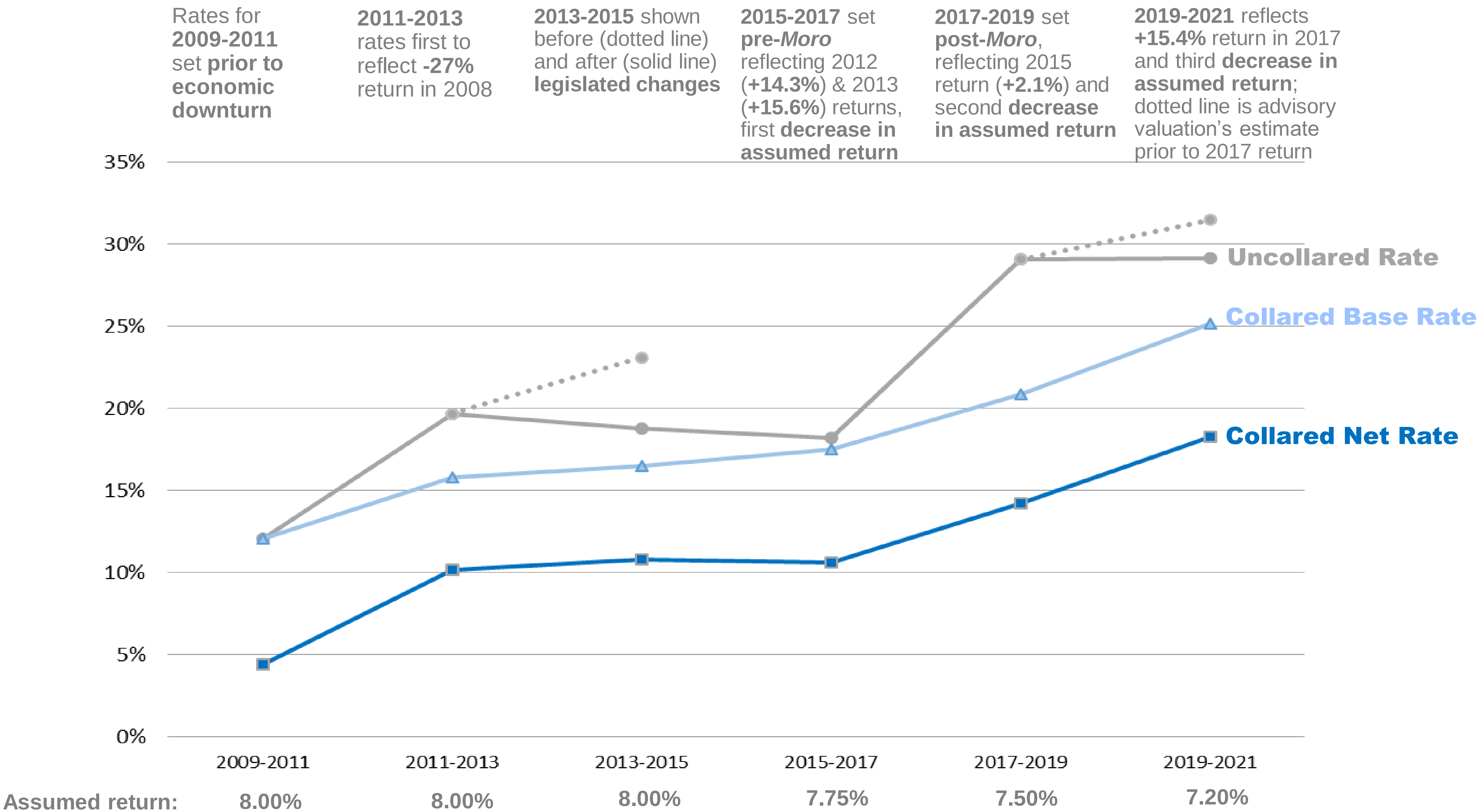
Assumed return: 8.00% 8.00% 8.00% 7.75% 7.50% 7.20%

SLGRP Weighted Pension-Only Rates



Assumed return:	8.00%	8.00%	8.00%	7.75%	7.50%	7.20%

System-Wide Weighted Pension-Only Rates



Individual Employer Rates

- Employers pay separate rates on different payroll:
  - Tier 1/Tier 2 Payroll
    - Either blended or (for SLGRP) separated by GS vs. PF
  - OPSRP General Service Payroll
  - OPSRP Police & Fire Payroll
- Individual rates (and accompanying detailed reports) provided for over 580 employers
  - 364 SLGRP employers
  - 126 independent employers
  - 95 School District employers with side accounts
    - An additional 200 School District employers without a side account all receive an identical report
- Detail for State Agencies shown on following slides

Individual Employer Rates

- From the employer rate listing provided in today's meeting materials

Summary of PERS Employer Contribution Rates

Rates shown reflect the effect of side account rate offsets and retiree healthcare contributions, and exclude contributions to the IAP and debt service for pension obligation bonds.

		Net Employer Contribution Rate 7/1/17 - 6/30/19			Net Employer Contribution Rate 7/1/19 - 6/30/21		
Employer Number	Employer Name	Tier 1/ Tier 2 Payroll	OPSRP General Service Payroll	OPSRP Police and Fire Payroll	Tier 1/ Tier 2 Payroll	OPSRP General Service Payroll	OPSRP Police and Fire Payroll
	State						
1000	State Agencies	18.67%	10.78%	15.55%	22.24%	14.75%	19.38%

Individual Employer Rates

- From the detailed report PERS will provide to each employer:

Employer Rates Effective July 1, 2019 for State Agencies

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates			
	All T1/T2 Payroll	General Service	Police & Fire	General Service	Police & Fire
Pension					
Normal cost rate	15.71%	14.68%	20.78%	8.40%	13.03%
Tier 1/Tier 2 UAL rate[1]	10.36%	10.36%	10.36%	10.36%	10.36%
OPSRP UAL rate	1.45%	1.45%	1.45%	1.45%	1.45%
Pre-SLGRP pooled liability rate	1.71%	1.71%	1.71%	1.71%	1.71%
Transition liability/(surplus) rate[2]	0.00%	0.00%	0.00%	0.00%	0.00%
Side account rate relief [2]	(7.44%)	(7.44%)	(7.44%)	(7.44%)	(7.44%)
Net pension contribution rate	**21.79%**	**20.76%**	**26.86%**	**14.48%**	**19.11%**
Retiree Healthcare					
Normal cost rate	0.18%	0.18%	0.18%	0.00%	0.00%
UAL rate	0.27%	0.27%	0.27%	0.27%	0.27%
Net retiree healthcare rate	**0.45%**	**0.45%**	**0.45%**	**0.27%**	**0.27%**
Total net employer contribution rate	**22.24%**	**21.21%**	**27.31%**	**14.75%**	**19.38%**

Individual Employer Rates

- Focusing on just the Net Pension Rates circled in green from the prior slide, we can illustrate the weighted average rate calculation for State Agencies

State Agencies	Tier 1 / Tier 2	OPSRP General Service	OPSRP Police & Fire	Total
Projected 2018 Payroll ($ millions)	$1,190	$1,570	$200	$2,960
Collared 2019-21 net pension contribution rates	21.79%	14.48%	19.11%	17.73%*
Contribution for weighting	$259	$228	$38	$525

** Weighted average: $525 / $2,960 = 17.73%*

- From slide 22 of our August presentation, projected State Agencies payroll for the 2019-21 biennium is $6,350 million, which is the 2018 valuation payroll of $2,960 million projected with the 3.50% annual payroll growth assumption
  - Projected 2019-21 pension contribution: $6,350 million x 17.73% = $1,125 million

Wrap Up / Next Steps

- Adoption of employer-specific rates for 2019-21 biennium
- PERS to distribute detailed reports to employers
- In December, we will present contribution rate and funded status projections
  - Focuses on system-average results
  - Will use the latest year-to-date investment return information at the time the projections are made
  - Projections will be developed using two types of models
    - Steady return
    - Variable return

Appendix

Certification

This presentation summarizes a few key results of an actuarial valuation of the Oregon Public Employees Retirement System ("PERS" or "the System") as of December 31, 2017, for the Plan Year ending December 31, 2017. The results are high-level in nature and may not be relied upon to, for example, prepare the System's Consolidated Annual Financial Report (CAFR). The full development of detailed results is shown in the formal December 31, 2017 System-Wide Actuarial Valuation Report.

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, statutory provisions, employee 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 our best estimate of anticipated experience affecting the System.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan 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 plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The PERS Board has the final decision regarding the appropriateness of the assumptions.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the System. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the plan provisions described in the appendix of this report. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Certification

Milliman’s work is prepared solely for the internal business use of the Oregon Public Employees Retirement System. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman’s work may not be provided to 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 its work product. Milliman’s consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception(s):

(a) The System may provide a copy of Milliman’s work, in its entirety, to the System’s professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman’s work for any purpose other than to benefit the System.

(b) The System may provide a copy of Milliman’s work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. 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 actuaries are independent of the plan sponsors. 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.

Data Exhibits

	2017				2016
	Tier 1	Tier 2	OPSRP	Total	Total
Active Members					
Count	22,749	35,958	114,295	173,002	172,483
Average Age	56.1	51.2	42.7	46.2	46.4
Average Service	25.2	16.9	6.1	10.9	11.1
Average prior year Covered Salary	$ 78,492	$ 70,429	$ 48,405	$ 56,939	56,140
Inactive Members[1]					
Count	13,188	15,166	17,349	45,703	45,321
Average Age	59.5	53.6	47.5	53.0	53.4
Average Monthly Benefit	$ 2,068	$ 772	$ 406	$ 1,007	1,053
Retired Members and Beneficiaries[1]					
Count	127,687	13,180	4,115	144,982	138,783
Average Age	72.3	67.5	66.8	71.7	71.6
Average Monthly Benefit[2]	$ 2,817	$ 1,004	$ 478	$ 2,586	2,521
Total Members	**163,624**	**64,304**	**135,759**	**363,687**	**356,587**

[1] *Inactive and Retiree counts are shown by lives within each rate pool. In other words, a member is counted once for purposes of this exhibit, regardless of their service history for different rate pools. This contrasts with the method used to count inactive participants in some of the later exhibits.*

[2] *The average monthly benefit reflects an estimated adjustment for the effect of the Supreme Court decision in Moro v. State of Oregon for records that were not already adjusted in the data provided.*

Actuarial Basis

Data

We have based our calculation of the liabilities on the data supplied by the Oregon Public Employees Retirement System and summarized in the data exhibits on the preceding slides.

Assets as of December 31, 2017, were based on values provided by Oregon PERS reflecting the Board's earnings crediting decisions for 2017.

Methods / Policies

Actuarial Cost Method: Entry Age Normal, adopted effective December 31, 2012.

UAL Amortization: The UAL for OPSRP, and Retiree Health Care as of December 31, 2007 are amortized as a level percentage of combined valuation payroll over a closed 16 year period for OPSRP and a closed 10 year period for Retiree Health Care. For the Tier 1/Tier 2 UAL, the amortization period was reset at 20 years as of December 31, 2013. Gains and losses between subsequent odd-year valuations are amortized as a level percentage of combined valuation payroll over the amortization period (20 years for Tier/Tier 1, 16 years for OPSRP, 10 years for Retiree Health Care) from the odd-year valuation in which they are first recognized.

Actuarial Basis

Methods / Policies (cont'd)

Contribution rate stabilization method: Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) are confined to a collar based on the prior contribution rate (prior to application of side accounts, pre-SLGRP liabilities, and 6 percent Independent Employer minimum). The new contribution rate will generally not increase or decrease from the prior contribution rate by more than the greater of 3 percentage points or 20 percent of the prior contribution rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funded 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.

Expenses: Tier 1/Tier 2 administration expenses are assumed to be equal to $37.5M, while OPSRP administration expenses are assumed to be equal to $6.5M. The assumed expenses are added to the respective normal costs.

Actuarial Value of Assets: Equal to Market Value of Assets excluding Contingency and Tier 1 Rate Guarantee Reserves. The Tier 1 Rate Guarantee Reserve is not excluded from assets if it is negative (i.e. in deficit status).

Assumptions

Assumptions for valuation calculations are as described in the 2016 Experience Study for Oregon PERS and presented to the PERS Board in July 2017.

Provisions

Provisions valued are as detailed in the December 31, 2017 System-Wide Actuarial Valuation Report.

Summary of PERS Employer Contribution Rates

Rates shown reflect the effect of side account rate offsets and retiree healthcare contributions, and exclude contributions to the IAP and debt service for pension obligation bonds.

Employer Number	Employer Name	Net Employer Contribution Rate 7/1/17 - 6/30/19			Net Employer Contribution Rate 7/1/19 - 6/30/21		
		Tier 1/ Tier 2 Payroll	OPSRP General Service Payroll	OPSRP Police and Fire Payroll	Tier 1/ Tier 2 Payroll	OPSRP General Service Payroll	OPSRP Police and Fire Payroll
	Independent Employers						
	City						
2167	City of Athena	11.15%	8.92%	13.69%	13.89%	12.38%	17.01%
2106	City of Beaverton	18.39%	9.72%	14.49%	21.45%	12.45%	17.08%
2107	City of Bend	20.73%	12.13%	16.90%	24.88%	16.20%	20.83%
2149	City of Canyonville	17.91%	9.63%	14.40%	20.88%	14.84%	19.47%
2186	City of Chiloquin	14.59%	6.56%	11.33%	15.51%	7.28%	11.91%
2162	City of Clatskanie	19.43%	10.98%	15.75%	23.41%	15.96%	20.59%
2152	City of Coos Bay	20.93%	9.74%	14.51%	24.50%	13.41%	18.04%
2165	City of Cornelius	16.42%	10.37%	15.14%	19.16%	12.95%	17.58%
2127	City of Cottage Grove	21.57%	11.10%	15.87%	25.27%	13.87%	18.50%
2257	City of Culver	20.78%	15.72%	20.49%	28.12%	23.67%	28.30%
2262	City of Dufur	20.19%	12.98%	17.75%	23.61%	15.03%	19.66%
2282	City of Eagle Point	19.60%	10.44%	15.21%	22.91%	13.10%	17.73%
2111	City of Eugene	21.40%	12.38%	17.15%	25.07%	16.23%	20.86%
2112	City Of Forest Grove	N/A	N/A	N/A	18.69%	10.27%	14.90%
2248	City of Fossil	13.18%	7.29%	12.06%	15.92%	0.00%	1.74%
2309	City of Gearhart	16.48%	6.32%	11.09%	19.22%	9.43%	14.06%
2264	City of Gervais	15.14%	11.22%	15.99%	17.88%	13.79%	18.42%
2250	City of Gold Beach	17.75%	11.01%	15.78%	18.93%	11.62%	16.25%
2114	City of Gresham	15.39%	4.96%	9.73%	18.66%	8.29%	12.92%
2210	City of Helix	13.12%	7.61%	12.38%	15.86%	7.28%	11.91%
2115	City of Hillsboro	19.64%	11.57%	16.34%	22.95%	14.99%	19.62%
2222	City of Jacksonville	18.73%	7.32%	12.09%	21.86%	12.34%	16.97%
2232	City of Joseph	21.27%	16.93%	21.70%	24.91%	16.33%	20.96%
2279	City of Keizer	17.72%	7.30%	12.07%	20.65%	9.49%	14.12%
2283	City of Maupin	13.23%	3.90%	8.67%	15.97%	6.76%	11.39%
2246	City of Merrill	10.24%	0.43%	1.63%	12.98%	0.00%	4.33%
2195	City of Metolius	7.27%	0.43%	0.43%	7.45%	0.00%	0.00%
2290	City of Molalla	15.19%	8.04%	12.81%	17.33%	10.94%	15.57%
2174	City of Mt Angel	14.31%	6.42%	11.19%	17.05%	10.33%	14.96%
2118	City of Ontario	28.49%	17.72%	22.49%	35.17%	24.95%	29.58%
2218	City of Prairie City	12.89%	9.53%	14.30%	16.23%	14.81%	19.44%
2146	City of Prineville	12.17%	3.94%	8.71%	14.62%	6.97%	11.60%
2297	City of Rainier	16.48%	6.67%	11.44%	19.22%	8.75%	13.38%
2101	City of Salem	21.07%	11.97%	16.74%	25.49%	16.41%	21.04%
2219	City of Sheridan	15.16%	7.31%	12.08%	17.90%	13.52%	18.15%
2213	City of Stanfield	7.27%	0.45%	5.22%	10.01%	0.00%	0.00%
2129	City of Sweet Home	10.24%	1.22%	5.99%	12.98%	3.36%	7.99%
2261	City of Waldport	12.46%	5.07%	9.84%	15.20%	7.83%	12.46%

Summary of PERS Employer Contribution Rates

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		Tier 1/ Tier 2 Payroll	OPSRP General Service Payroll	OPSRP Police and Fire Payroll	Tier 1/ Tier 2 Payroll	OPSRP General Service Payroll	OPSRP Police and Fire Payroll
	Independent Employers						
	City						
2189	City of Willamina	7.27%	0.43%	3.52%	7.45%	0.00%	3.24%
2253	Town of Butte Falls	13.18%	6.09%	10.86%	15.92%	8.58%	13.21%
	County						
2001	Clackamas County	23.07%	14.82%	19.59%	27.07%	19.22%	23.85%
2002	Curry County	22.23%	11.21%	15.98%	26.06%	15.46%	20.09%
2003	Douglas County	32.18%	20.55%	25.32%	38.00%	27.86%	32.49%
2006	Jefferson County	18.63%	9.35%	14.12%	21.97%	12.20%	16.83%
2008	Lane County	18.74%	10.34%	15.11%	21.87%	14.22%	18.85%
2014	Linn County	23.15%	14.10%	18.87%	27.17%	18.55%	23.18%
2039	Malheur County	17.93%	8.52%	13.29%	20.90%	12.90%	17.53%
2037	Polk County	20.96%	12.44%	17.21%	24.54%	16.76%	21.39%
2050	Wallowa County	11.29%	0.43%	4.85%	14.03%	0.00%	0.75%
2015	Yamhill County	16.48%	8.74%	13.51%	19.22%	10.98%	15.61%
	Special Districts						
2664	Applegate Valley Rural Fire Protection District #9	17.76%	8.01%	12.78%	20.70%	10.76%	15.39%
2702	Banks Fire District #13	23.03%	11.41%	16.18%	27.02%	13.83%	18.46%
2596	Bend Parks & Recreation	16.08%	10.94%	15.71%	18.82%	13.75%	18.38%
2648	Black Butte Ranch Rural Fire Protection District	16.48%	3.15%	7.92%	19.22%	5.62%	10.25%
2833	Boardman Rural Fire Protection District	22.30%	9.34%	14.11%	23.91%	11.09%	15.72%
2779	Brownsville Rural Fire Protection District	16.37%	4.78%	9.55%	19.11%	7.33%	11.96%
2678	Central Oregon Regional Housing Authority	12.75%	10.84%	15.61%	15.49%	12.70%	17.33%
2645	Chiloquin Agency Lake Rural Fire Protection District	19.18%	7.71%	12.48%	22.40%	13.82%	18.45%
2693	City-County Insurance Services	18.66%	14.37%	19.14%	15.94%	11.43%	16.06%
2518	Clackamas County Housing Authority	21.57%	14.19%	18.96%	25.27%	17.75%	22.38%
2870	Clackamas River Water Providers	11.67%	11.20%	15.97%	12.50%	12.13%	16.76%
2679	Columbia River Public Utility District	17.31%	12.24%	17.01%	20.78%	16.53%	21.16%
2828	Deschutes Public Library District	16.65%	11.18%	15.95%	19.39%	14.29%	18.92%
2527	Deschutes Valley Water District	24.38%	18.20%	22.97%	29.09%	23.79%	28.42%
2729	Douglas County Fire District #2	32.70%	21.04%	25.81%	44.82%	32.41%	37.04%
2743	Douglas Soil & Water Conservation District	7.27%	0.43%	0.43%	8.45%	0.00%	0.75%
2529	East Fork Irrigation District	14.06%	1.25%	6.02%	16.80%	2.81%	7.44%
2618	Estacada Cemetery District	7.27%	0.43%	0.43%	7.45%	0.00%	0.00%
2623	Evans Valley Fire District #6	10.72%	0.43%	2.95%	11.44%	0.00%	3.13%
2785	Fern Ridge Community Library	10.95%	1.44%	6.21%	13.69%	2.01%	6.64%
2608	Gaston Rural Fire Protection District	18.68%	12.87%	17.64%	16.73%	8.15%	12.78%
2698	Halsey Shedd Rural Fire Protection District	13.15%	0.43%	5.15%	16.49%	10.12%	14.75%
2771	Harbor Water PUD	13.81%	3.78%	8.55%	16.55%	5.50%	10.13%
2717	Ice Fountain Water District	16.48%	9.71%	14.48%	19.22%	12.83%	17.46%

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	Independent Employers						
	Special Districts						
2556	Jackson County Fire District #5	25.41%	12.93%	17.70%	32.25%	19.23%	23.86%
2575	Jefferson County Rural Fire Protection District #1	17.83%	10.94%	15.71%	20.78%	13.34%	17.97%
2841	Jefferson County Soil & Water Conservation District	13.18%	10.85%	15.62%	14.01%	11.52%	16.15%
2809	Juntura Road District #4	N/A	N/A	N/A	31.43%	22.85%	27.48%
2515	Klamath County Fire District #1	28.18%	16.67%	21.44%	34.78%	23.01%	27.64%
2760	Knappa Svensen Burnside Rural Fire Protection District	16.13%	4.26%	9.03%	18.87%	7.56%	12.19%
2879	LaGrande Rural Fire Protection District	18.63%	9.87%	14.64%	18.58%	10.00%	14.63%
2881	Lake Chinook Fire and Rescue District	18.63%	9.87%	14.64%	18.58%	10.00%	14.63%
2644	Lakeside Water District	16.98%	12.96%	17.73%	16.41%	12.90%	17.53%
2521	League of Oregon Cities	18.66%	14.37%	19.14%	25.16%	22.19%	26.82%
2597	Mapleton Water District	16.79%	8.16%	12.93%	18.12%	9.41%	14.04%
2877	Mid-Columbia Fire And Rescue V1-801	18.72%	9.98%	14.75%	19.98%	10.20%	14.83%
2782	Millington Rural Fire Protection District	10.24%	0.43%	0.45%	12.98%	0.00%	2.29%
2861	Mt Angel Fire District	16.91%	6.25%	11.02%	19.68%	8.51%	13.14%
2724	Nehalem Bay Wastewater Agency	13.18%	4.48%	9.25%	15.92%	7.67%	12.30%
2740	Neskowin Regional Sanitary Authority	12.80%	7.23%	12.00%	11.97%	6.05%	10.68%
2835	North Clackamas County Water Commission	16.20%	9.68%	14.45%	20.14%	13.26%	17.89%
2637	Northeast Oregon Housing Authority	14.34%	4.78%	9.55%	17.08%	7.21%	11.84%
2550	Nyssa Road Assessment District #2	36.55%	25.14%	29.91%	29.33%	18.42%	23.05%
2685	Oregon Community College Association	10.24%	6.59%	11.36%	12.67%	8.61%	13.24%
2876	Oregon Municipal Electric Utilities Association	13.44%	9.37%	14.14%	14.72%	6.14%	10.77%
2533	Owyhee Irrigation District	28.28%	19.95%	24.72%	31.91%	23.94%	28.57%
2688	Polk County Fire District #1	22.53%	11.91%	16.68%	26.42%	15.24%	19.87%
2613	Polk Soil & Water Conservation District	18.28%	9.52%	14.29%	20.77%	13.14%	17.77%
2507	Port of Astoria	15.01%	9.70%	14.47%	15.70%	12.83%	17.46%
2633	Port of Cascade Locks	10.52%	4.71%	9.48%	13.26%	7.44%	12.07%
2788	Port of Hood River	16.39%	11.47%	16.24%	19.13%	14.02%	18.65%
2570	Port of St Helens	12.76%	9.71%	14.48%	11.34%	8.38%	13.01%
2581	Port of Umatilla	22.12%	10.12%	14.89%	25.93%	9.10%	13.73%
2689	Redmond Area Park & Recreation District	13.73%	8.19%	12.96%	16.33%	11.27%	15.90%
2672	Rockwood Water PUD	19.39%	13.50%	18.27%	22.65%	16.76%	21.39%
2747	Salem Housing Authority	20.37%	14.11%	18.88%	23.83%	19.02%	23.65%
2675	Salmon Harbor-Douglas County	13.18%	9.28%	14.05%	15.92%	12.87%	17.50%
2885	Siletz Rural Fire Protection District	18.63%	9.87%	14.64%	18.58%	10.00%	14.63%
2701	Sisters-Camp Sherman Rural Fire Protection District	29.30%	17.90%	22.67%	40.06%	27.19%	31.82%
2859	South Lane County Fire and Rescue	34.03%	22.07%	26.84%	35.45%	23.46%	28.09%
2845	Sunrise Water Authority	20.93%	17.94%	22.71%	20.34%	17.91%	22.54%
2643	Sweet Home Cemetery	22.16%	13.38%	18.15%	20.65%	11.88%	16.51%

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	Independent Employers						
	Special Districts						
2722	Tillamook 9-1-1	10.24%	4.59%	9.36%	12.98%	7.42%	12.05%
2821	Tillamook County Soil And Water Conservation District	17.05%	11.93%	16.70%	19.85%	14.49%	19.12%
2783	Tillamook Fire District	17.61%	5.67%	10.44%	20.52%	7.62%	12.25%
2865	Tri-County Cooperative Weed Management Area	16.24%	7.48%	12.25%	18.98%	10.40%	15.03%
2610	Turner Fire District	19.24%	0.43%	3.50%	22.47%	5.84%	10.47%
2887	Umatilla County Fire District #1	N/A	N/A	N/A	30.73%	19.88%	24.51%
2874	Umatilla-Morrow Radio and Data District	12.49%	9.89%	14.66%	13.70%	10.92%	15.55%
2536	Valley View Cemetery	7.27%	0.43%	0.43%	7.45%	0.00%	0.00%
2797	Vernonia Fire	10.24%	7.37%	12.14%	12.02%	8.98%	13.61%
2796	West Side Rural Fire Protection District	13.53%	4.77%	9.54%	10.27%	1.69%	6.32%
2725	West Valley Fire District	18.73%	4.18%	8.95%	21.86%	10.04%	14.67%
2714	Winchester Bay Sanitary District	18.68%	12.36%	17.13%	20.93%	13.27%	17.90%
2878	Yamhill Fire Protection District	18.63%	9.87%	14.64%	15.00%	11.11%	15.74%

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	Judiciary						
2099	State Judiciary	18.05%	N/A	N/A	20.92%	N/A	N/A

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	School Districts						
	School						
4306	Amity School District	5.10%	0.43%	4.54%	8.29%	2.84%	7.47%
3003	Baker School District #5J	15.68%	10.35%	15.12%	20.04%	14.59%	19.22%
4035	Banks School District	22.27%	16.94%	21.71%	26.91%	21.46%	26.09%
4062	Beaverton School District	17.52%	12.19%	16.96%	22.86%	17.41%	22.04%
3291	Bend-La Pine Public Schools	17.99%	12.66%	17.43%	22.76%	17.31%	21.94%
3283	Brookings-Harbor School District #17C	10.58%	5.25%	10.02%	14.83%	9.38%	14.01%
4333	Canby School District	6.93%	1.60%	6.37%	11.46%	6.01%	10.64%
4334	Cascade School District #5	9.35%	4.02%	8.79%	14.33%	8.88%	13.51%
3859	Central School District #13J	12.47%	7.14%	11.91%	17.27%	11.82%	16.45%
4259	Clackamas Education Service District	15.09%	9.76%	14.53%	18.99%	13.54%	18.17%
3179	Clatsop County School District #1C	3.18%	0.43%	2.62%	6.11%	0.66%	5.29%
3242	Coos Bay School District #9	20.18%	14.85%	19.62%	24.86%	19.41%	24.04%
3039	Corvallis School District #509J	14.56%	9.23%	14.00%	18.77%	13.32%	17.95%
3502	Creswell School District #40	22.48%	17.15%	21.92%	26.82%	21.37%	26.00%
3274	Crook County School District	6.28%	0.95%	5.72%	9.57%	4.12%	8.75%
3843	David Douglas School District	23.65%	18.32%	23.09%	28.45%	23.00%	27.63%
4291	Dayton Public Schools	8.73%	3.40%	8.17%	12.93%	7.48%	12.11%
4237	Douglas Education Service District	22.18%	16.85%	21.62%	27.16%	21.71%	26.34%
3927	Echo School District	15.52%	10.19%	14.96%	21.42%	15.97%	20.60%
4323	Estacada School District #108	13.82%	8.49%	13.26%	18.48%	13.03%	17.66%
3473	Eugene School District 4J	21.57%	16.24%	21.01%	26.16%	20.71%	25.34%
3887	Falls City School District	6.59%	1.26%	6.03%	9.48%	4.03%	8.66%
3494	Fern Ridge School District	13.96%	8.63%	13.40%	18.14%	12.69%	17.32%
4313	Forest Grove School District	19.20%	13.87%	18.64%	24.20%	18.75%	23.38%
4034	Gaston Public Schools	11.28%	5.95%	10.72%	15.48%	10.03%	14.66%
4329	Gervais School District #1	5.99%	0.66%	5.43%	7.87%	2.42%	7.05%
3160	Gladstone School District #115	2.95%	0.43%	2.39%	7.82%	2.37%	7.00%
3316	Glide School District #12	15.72%	10.39%	15.16%	20.46%	15.01%	19.64%
4260	Greater Albany School District #8J	18.27%	12.94%	17.71%	23.14%	17.69%	22.32%
4332	Gresham-Barlow School District #10	13.89%	8.56%	13.33%	17.89%	12.44%	17.07%
4326	Harney County School District #3	0.50%	0.43%	0.43%	0.06%	0.00%	0.00%
4258	Hermiston School District #8R	17.12%	11.79%	16.56%	22.06%	16.61%	21.24%
4252	High Desert Education Service District	16.76%	11.43%	16.20%	22.04%	16.59%	21.22%
4341	Hillsboro School District #1J	16.88%	11.55%	16.32%	21.73%	16.28%	20.91%
3409	Hood River County School District	16.03%	10.70%	15.47%	20.03%	14.58%	19.21%
4223	InterMountain Education Service District	13.81%	8.48%	13.25%	19.06%	13.61%	18.24%
3729	Jefferson School District #14Cj	9.36%	4.03%	8.80%	14.27%	8.82%	13.45%
4315	John Day School District	14.18%	8.85%	13.62%	14.74%	9.29%	13.92%

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	School Districts						
	School						
3965	La Grande Public Schools	14.54%	9.21%	13.98%	19.90%	14.45%	19.08%
4268	Lake Oswego School District	13.02%	7.69%	12.46%	18.28%	12.83%	17.46%
4276	Lane County Education Service District	18.64%	13.31%	18.08%	23.54%	18.09%	22.72%
3579	Lincoln County School District	0.50%	0.43%	0.43%	0.06%	0.00%	0.00%
3447	Madras School District	18.79%	13.46%	18.23%	23.40%	17.95%	22.58%
4142	McMinnville Schools	18.33%	13.00%	17.77%	23.07%	17.62%	22.25%
4288	Medford School District #549C	22.35%	17.02%	21.79%	26.96%	21.51%	26.14%
4335	Milton-Freewater Unified School District #7	5.86%	0.53%	5.30%	9.80%	4.35%	8.98%
4331	Molalla River School District	0.50%	0.43%	0.43%	3.21%	0.00%	2.39%
4340	Monroe School District #1J	18.92%	13.59%	18.36%	21.95%	16.50%	21.13%
3809	Morrow County Schools	18.55%	13.22%	17.99%	23.63%	18.18%	22.81%
4238	Multnomah Education Service District	9.23%	3.90%	8.67%	14.56%	9.11%	13.74%
4336	Nestucca Valley School District #101	19.15%	13.82%	18.59%	22.76%	17.31%	21.94%
4135	Newberg School District #29Jt	11.69%	6.36%	11.13%	15.88%	10.43%	15.06%
3245	North Bend Public Schools	17.90%	12.57%	17.34%	22.32%	16.87%	21.50%
4321	North Clackamas School District #12	11.09%	5.76%	10.53%	16.75%	11.30%	15.93%
3730	North Marion School District #15	13.76%	8.43%	13.20%	17.72%	12.27%	16.90%
4342	North Santiam School District #29J	10.15%	4.82%	9.59%	13.57%	8.12%	12.75%
4381	North Wasco County School District #21	14.69%	9.36%	14.13%	18.17%	12.72%	17.35%
3684	Ontario School District #8C	17.98%	12.65%	17.42%	21.88%	16.43%	21.06%
3122	Oregon City School District #62	17.00%	11.67%	16.44%	21.05%	15.60%	20.23%
3931	Pendleton School District #16R	5.68%	0.43%	5.12%	8.71%	3.26%	7.89%
3043	Philomath School District #17J	15.32%	9.99%	14.76%	21.25%	15.80%	20.43%
3414	Phoenix-Talent School District	14.72%	9.39%	14.16%	18.97%	13.52%	18.15%
3958	Pilot Rock School District #2R	12.69%	7.36%	12.13%	16.97%	11.52%	16.15%
3818	Portland Public Schools	6.66%	1.33%	6.10%	8.81%	3.36%	7.99%
4320	Rainier School District #13	12.77%	7.44%	12.21%	15.50%	10.05%	14.68%
4311	Redmond School District #2J	18.52%	13.19%	17.96%	23.28%	17.83%	22.46%
4312	Reedsport School District	10.97%	5.64%	10.41%	18.09%	12.64%	17.27%
3824	Reynolds School District	13.20%	7.87%	12.64%	15.44%	9.99%	14.62%
3847	Riverdale School	16.05%	10.72%	15.49%	21.18%	15.73%	20.36%
3310	Roseburg Public Schools	12.47%	7.14%	11.91%	16.79%	11.34%	15.97%
3735	Salem-Keizer Public Schools	16.38%	11.05%	15.82%	20.96%	15.51%	20.14%
3665	Santiam Canyon School District	8.18%	2.85%	7.62%	13.33%	7.88%	12.51%
3000	School Districts	27.20%	21.87%	26.64%	32.03%	26.58%	31.21%
3187	Seaside Schools	16.64%	11.31%	16.08%	21.09%	15.64%	20.27%
4317	Sherwood School District #88J	22.47%	17.14%	21.91%	27.20%	21.75%	26.38%
4270	Silver Falls School District	17.08%	11.75%	16.52%	21.21%	15.76%	20.39%

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	School Districts						
	School						
3296	Sisters School District	8.66%	3.33%	8.10%	12.89%	7.44%	12.07%
3537	Siuslaw School District #97J	14.16%	8.83%	13.60%	17.12%	11.67%	16.30%
3506	South Lane School District	9.59%	4.26%	9.03%	12.41%	6.96%	11.59%
3319	South Umpqua School District	0.50%	0.43%	0.43%	0.06%	0.00%	0.00%
3487	Springfield School District #19	16.60%	11.27%	16.04%	20.71%	15.26%	19.89%
4279	St Helens School District #502	5.61%	0.43%	5.05%	9.07%	3.62%	8.25%
3942	Stanfield School District	8.17%	2.84%	7.61%	14.08%	8.63%	13.26%
3353	Sutherlin School District #130	7.06%	1.73%	6.50%	11.17%	5.72%	10.35%
3618	Sweet Home School District #55	5.89%	0.56%	5.33%	8.33%	2.88%	7.51%
4338	Three Rivers U J School District	16.37%	11.04%	15.81%	20.80%	15.35%	19.98%
4316	Tigard-Tualatin School District #23J	22.69%	17.36%	22.13%	27.59%	22.14%	26.77%
3902	Tillamook Public Schools	5.55%	0.43%	4.99%	8.49%	3.04%	7.67%
3928	Umatilla School District #6R	20.20%	14.87%	19.64%	24.08%	18.63%	23.26%
3966	Union County School District	12.89%	7.56%	12.33%	17.16%	11.71%	16.34%
3195	Warrenton-Hammond School District	18.82%	13.49%	18.26%	24.49%	19.04%	23.67%
3075	West Linn School District	18.56%	13.23%	18.00%	24.25%	18.80%	23.43%
4254	Willamette Education Service District	7.94%	2.61%	7.38%	10.86%	5.41%	10.04%
4314	Willamina School District #30J	22.70%	17.37%	22.14%	27.35%	21.90%	26.53%
3349	Winston-Dillard Schools	0.50%	0.43%	0.43%	0.06%	0.00%	0.00%
4166	Yamhill-Carlton School District #1	1.56%	0.43%	1.00%	0.11%	0.00%	0.00%

Summary of PERS Employer Contribution Rates

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Employer Number	Employer Name	Net Employer Contribution Rate 7/1/17 - 6/30/19			Net Employer Contribution Rate 7/1/19 - 6/30/21		
		Tier 1/ Tier 2 Payroll	OPSRP General Service Payroll	OPSRP Police and Fire Payroll	Tier 1/ Tier 2 Payroll	OPSRP General Service Payroll	OPSRP Police and Fire Payroll
	SLGRP (Default Tier 1/Tier 2 Rates)						
	CC						
2901	Blue Mountain Community College	14.75%	8.17%	12.94%	18.16%	12.07%	16.70%
2999	Central Oregon Community College	19.09%	12.51%	17.28%	22.54%	16.45%	21.08%
2919	Chemeketa Community College	12.88%	6.30%	11.07%	15.75%	9.66%	14.29%
2908	Clackamas Community College	14.49%	7.91%	12.68%	18.15%	12.06%	16.69%
2900	Clatsop Community College	12.40%	5.82%	10.59%	15.17%	9.08%	13.71%
2996	Columbia Gorge Community College	16.72%	10.14%	14.91%	19.42%	13.33%	17.96%
2906	Klamath Community College	23.40%	16.82%	21.59%	27.46%	21.37%	26.00%
2904	Lane Community College	11.79%	5.21%	9.98%	12.72%	6.63%	11.26%
2910	Linn-Benton Community College	13.81%	7.23%	12.00%	17.23%	11.14%	15.77%
2905	Mt Hood Community College	8.15%	1.57%	6.34%	11.81%	5.72%	10.35%
2995	Oregon Coast Community College	13.25%	6.67%	11.44%	18.44%	12.35%	16.98%
2918	Portland Community College	14.99%	8.41%	13.18%	17.78%	11.69%	16.32%
2922	Rogue Community College	15.24%	8.66%	13.43%	17.97%	11.88%	16.51%
2998	Southwestern Community College	12.78%	6.20%	10.97%	15.73%	9.64%	14.27%
2997	Tillamook Bay Community College	15.77%	9.19%	13.96%	20.73%	14.64%	19.27%
2902	Treasure Valley Community College	12.00%	5.42%	10.19%	11.87%	5.78%	10.41%
2903	Umpqua Community College	15.55%	8.97%	13.74%	17.15%	11.06%	15.69%
	City						
2258	City of Adair Village	22.52%	14.69%	19.46%	26.57%	19.08%	23.71%
2103	City of Albany	21.87%	12.79%	17.56%	26.51%	17.27%	21.90%
2235	City of Amity	8.33%	4.02%	8.79%	14.97%	7.48%	12.11%
2104	City of Ashland	23.08%	14.49%	19.26%	27.51%	19.02%	23.65%
2105	City of Astoria	24.66%	15.79%	20.56%	28.91%	20.55%	25.18%
2234	City of Aumsville	17.02%	8.95%	13.72%	21.77%	14.38%	19.01%
2272	City of Aurora	8.14%	0.43%	3.31%	10.35%	2.86%	7.49%
2159	City of Baker City	22.77%	13.63%	18.40%	27.21%	18.11%	22.74%
2150	City of Bandon	20.65%	13.74%	18.51%	24.76%	18.23%	22.86%
2231	City of Banks	9.57%	5.26%	10.03%	14.08%	9.78%	14.41%
2241	City of Bay City	14.52%	10.21%	14.98%	19.33%	15.03%	19.66%
2178	City of Boardman	20.43%	13.54%	18.31%	26.05%	17.94%	22.57%
2216	City of Brookings	21.78%	13.21%	17.98%	26.19%	17.57%	22.20%
2204	City of Burns	17.18%	8.80%	13.57%	22.00%	14.27%	18.90%
2109	City of Canby	18.89%	9.77%	14.54%	22.37%	13.60%	18.23%
2223	City of Cannon Beach	19.26%	11.73%	16.50%	23.15%	16.38%	21.01%
2198	City of Carlton	10.34%	4.26%	9.03%	15.24%	10.94%	15.57%
2182	City of Cascade Locks	31.17%	21.57%	26.34%	35.28%	26.44%	31.07%
2194	City of Cave Junction	20.53%	12.85%	17.62%	23.59%	17.25%	21.88%
2181	City of Central Point	20.60%	13.01%	17.78%	24.86%	17.54%	22.17%

Summary of PERS Employer Contribution Rates

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	SLGRP (Default Tier 1/Tier 2 Rates)						
	City						
2201	City of Coburg	12.50%	6.41%	11.18%	16.49%	9.16%	13.79%
2271	City of Columbia City	23.55%	13.95%	18.72%	27.81%	18.47%	23.10%
2177	City of Condon	31.24%	26.68%	31.45%	36.56%	32.26%	36.89%
2110	City of Coquille	23.35%	15.14%	19.91%	27.95%	19.77%	24.40%
2155	City of Corvallis	16.91%	7.93%	12.70%	20.61%	11.81%	16.44%
2236	City of Creswell	18.39%	13.25%	18.02%	23.50%	18.48%	23.11%
2202	City of Dallas	22.03%	13.74%	18.51%	26.60%	18.24%	22.87%
2252	City of Dayton	14.18%	6.90%	11.67%	18.16%	11.33%	15.96%
2294	City of Depoe Bay	20.65%	13.95%	18.72%	24.32%	18.43%	23.06%
2131	City of Drain	20.48%	14.02%	18.79%	27.36%	18.53%	23.16%
2245	City of Dundee	20.39%	12.68%	17.45%	24.73%	17.18%	21.81%
2299	City of Dunes City	N/A	N/A	N/A	37.65%	30.16%	34.79%
2269	City of Durham	19.02%	11.19%	15.96%	24.49%	17.00%	21.63%
2225	City of Echo	29.22%	20.17%	24.94%	32.84%	24.50%	29.13%
2205	City of Elgin	0.50%	0.43%	0.43%	0.06%	0.00%	0.00%
2305	City of Elkton	18.40%	14.09%	18.86%	22.91%	18.61%	23.24%
2180	City of Enterprise	22.34%	15.68%	20.45%	26.44%	20.15%	24.78%
2179	City of Estacada	22.26%	14.87%	19.64%	25.98%	19.17%	23.80%
2208	City of Fairview	20.55%	12.23%	17.00%	23.20%	15.74%	20.37%
2224	City of Falls City	17.05%	10.19%	14.96%	21.88%	15.01%	19.64%
2291	City of Florence	14.98%	5.93%	10.70%	18.85%	10.14%	14.77%
2220	City of Garibaldi	23.08%	17.00%	21.77%	27.90%	21.49%	26.12%
2242	City of Gaston	0.50%	0.43%	0.43%	0.06%	0.00%	0.00%
2304	City of Gladstone	19.19%	10.00%	14.77%	25.38%	15.92%	20.55%
2274	City of Gold Hill	5.96%	1.65%	6.42%	0.06%	0.00%	0.00%
2113	City of Grants Pass	23.81%	14.46%	19.23%	28.25%	18.95%	23.58%
2284	City of Halsey	12.91%	8.60%	13.37%	17.37%	13.07%	17.70%
2296	City of Happy Valley	20.07%	14.02%	18.79%	24.29%	18.53%	23.16%
2268	City of Harrisburg	18.56%	13.11%	17.88%	23.02%	17.66%	22.29%
2193	City of Heppner	1.37%	0.43%	0.43%	4.67%	0.00%	1.81%
2160	City of Hermiston	22.23%	14.42%	19.19%	26.81%	18.84%	23.47%
2226	City of Hines	17.01%	12.70%	17.47%	24.98%	17.49%	22.12%
2138	City of Hood River	23.21%	12.98%	17.75%	27.86%	17.56%	22.19%
2196	City of Hubbard	25.85%	15.58%	20.35%	28.71%	19.97%	24.60%
2191	City of Huntington	50.59%	42.76%	47.53%	63.86%	56.37%	61.00%
2306	City of Imbler	N/A	N/A	N/A	26.21%	18.72%	23.35%
2267	City of Independence	21.10%	11.43%	16.20%	24.83%	16.15%	20.78%
2266	City of Irrigon	18.41%	12.59%	17.36%	22.76%	17.12%	21.75%

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		Tier 1/ Tier 2 Payroll	OPSRP General Service Payroll	OPSRP Police and Fire Payroll	Tier 1/ Tier 2 Payroll	OPSRP General Service Payroll	OPSRP Police and Fire Payroll
	SLGRP (Default Tier 1/Tier 2 Rates)						
	City						
2211	City of Jefferson	0.50%	0.43%	0.43%	0.06%	0.00%	0.00%
2229	City of John Day	13.20%	5.31%	10.08%	17.02%	9.09%	13.72%
2256	City of Jordan Valley	0.50%	0.43%	0.43%	0.06%	0.00%	0.00%
2199	City of Junction City	21.16%	13.34%	18.11%	25.08%	17.81%	22.44%
2287	City of King City	22.29%	11.29%	16.06%	28.42%	16.03%	20.66%
2148	City of Klamath Falls	16.09%	7.09%	11.86%	20.54%	11.41%	16.04%
2263	City of La Grande	21.11%	9.00%	13.77%	25.50%	13.01%	17.64%
2233	City of Lafayette	17.34%	11.47%	16.24%	20.73%	14.64%	19.27%
2120	City of Lake Oswego	24.31%	14.69%	19.46%	28.66%	19.12%	23.75%
2244	City of Lakeside	10.11%	5.80%	10.57%	8.85%	4.55%	9.18%
2140	City of Lebanon	19.24%	9.95%	14.72%	23.31%	14.42%	19.05%
2298	City of Lincoln City	17.89%	9.33%	14.10%	21.66%	13.43%	18.06%
2293	City of Lowell	19.33%	11.50%	16.27%	24.73%	17.24%	21.87%
2270	City of Lyons	22.56%	12.96%	17.73%	26.24%	17.41%	22.04%
2170	City of Madras	22.29%	12.33%	17.10%	27.39%	16.93%	21.56%
2247	City of Malin	17.37%	10.46%	15.23%	21.38%	14.91%	19.54%
2281	City of Manzanita	23.40%	13.01%	17.78%	29.09%	17.38%	22.01%
2117	City of McMinnville	25.98%	17.01%	21.78%	28.39%	18.53%	23.16%
2102	City of Medford	18.49%	8.94%	13.71%	22.52%	12.80%	17.43%
2207	City of Mill City	18.51%	14.20%	18.97%	23.04%	18.74%	23.37%
2286	City of Millersburg	21.48%	14.19%	18.96%	23.09%	18.79%	23.42%
2158	City of Milton-Freewater	23.83%	15.58%	20.35%	28.23%	20.30%	24.93%
2163	City of Milwaukie	19.14%	9.72%	14.49%	23.45%	13.99%	18.62%
2157	City of Monmouth	19.09%	10.81%	15.58%	22.54%	14.77%	19.40%
2209	City of Monroe	6.31%	0.43%	3.25%	13.89%	6.40%	11.03%
2301	City of Moro	15.97%	6.37%	11.14%	15.11%	7.62%	12.25%
2302	City of Mt. Vernon	18.46%	8.86%	13.63%	20.10%	11.27%	15.90%
2197	City of Myrtle Creek	17.78%	9.87%	14.64%	20.16%	13.96%	18.59%
2183	City of Myrtle Point	16.11%	7.19%	11.96%	18.60%	9.91%	14.54%
2777	City of Newberg	20.32%	10.02%	14.79%	21.99%	12.10%	16.73%
2276	City of Newport	19.43%	7.48%	12.25%	25.49%	13.16%	17.79%
2292	City of North Bend	20.57%	11.16%	15.93%	25.74%	15.95%	20.58%
2192	City of North Plains	17.85%	11.59%	16.36%	20.49%	16.19%	20.82%
2308	City of North Powder	16.78%	12.47%	17.24%	21.67%	17.37%	22.00%
2166	City of Nyssa	23.42%	13.52%	18.29%	27.15%	17.74%	22.37%
2143	City of Oakland	26.17%	21.86%	26.63%	33.17%	28.87%	33.50%
2168	City of Oakridge	29.63%	19.52%	24.29%	34.57%	23.55%	28.18%
2119	City of Oregon City	18.18%	10.67%	15.44%	22.76%	15.11%	19.74%

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	SLGRP (Default Tier 1/Tier 2 Rates)						
	City						
2154	City of Pendleton	19.88%	10.09%	14.86%	24.07%	14.25%	18.88%
2187	City of Philomath	19.95%	11.06%	15.83%	24.49%	15.85%	20.48%
2249	City of Phoenix	12.70%	5.23%	10.00%	15.57%	8.80%	13.43%
2161	City of Pilot Rock	26.04%	18.26%	23.03%	30.69%	23.81%	28.44%
2184	City of Port Orford	21.01%	13.17%	17.94%	26.10%	17.71%	22.34%
2121	City of Portland	17.62%	10.69%	15.46%	21.86%	15.53%	20.16%
2122	City of Redmond	18.46%	10.38%	15.15%	23.49%	15.42%	20.05%
2139	City of Reedsport	9.71%	1.78%	6.55%	14.44%	6.74%	11.37%
2260	City of Riddle	20.11%	11.96%	16.73%	24.25%	16.67%	21.30%
2203	City of Rockaway Beach	17.32%	11.98%	16.75%	23.41%	16.92%	21.55%
2251	City of Rogue River	26.09%	17.97%	22.74%	31.18%	22.36%	26.99%
2100	City of Roseburg	23.99%	14.02%	18.79%	28.11%	18.53%	23.16%
2172	City of Sandy	21.86%	13.28%	18.05%	26.40%	17.87%	22.50%
2176	City of Scappoose	22.43%	14.32%	19.09%	26.28%	18.87%	23.50%
2254	City of Shady Cove	7.22%	0.43%	4.16%	10.00%	2.51%	7.14%
2142	City of Sherwood	21.76%	13.77%	18.54%	26.61%	18.28%	22.91%
2273	City of Silverton	20.41%	11.69%	16.46%	24.84%	16.02%	20.65%
2221	City of Sisters	14.28%	9.97%	14.74%	18.80%	14.50%	19.13%
2278	City of Springfield	16.85%	8.31%	13.08%	21.65%	12.67%	17.30%
2123	City of St Helens	25.72%	18.01%	22.78%	29.62%	22.22%	26.85%
2757	City of Stayton	24.07%	13.07%	17.84%	29.33%	17.62%	22.25%
2217	City of Sutherlin	13.42%	4.92%	9.69%	18.29%	10.88%	15.51%
2188	City of Talent	19.25%	9.88%	14.65%	23.60%	14.35%	18.98%
2295	City of Tigard	20.51%	8.62%	13.39%	25.25%	12.99%	17.62%
2128	City of Tillamook	20.08%	12.27%	17.04%	25.06%	16.46%	21.09%
2275	City of Toledo	13.74%	4.49%	9.26%	15.46%	6.44%	11.07%
2237	City of Troutdale	11.11%	4.39%	9.16%	14.69%	8.63%	13.26%
2288	City of Tualatin	24.29%	15.52%	20.29%	28.84%	19.98%	24.61%
2228	City of Turner	22.17%	14.99%	19.76%	25.93%	19.67%	24.30%
2175	City of Umatilla	13.42%	5.61%	10.38%	19.07%	11.02%	15.65%
2145	City of Vale	26.40%	19.60%	24.37%	31.75%	25.64%	30.27%
2285	City of Veneta	19.27%	11.46%	16.23%	23.29%	16.02%	20.65%
2125	City of Vernonia	15.78%	7.98%	12.75%	21.70%	12.87%	17.50%
2200	City of Wallowa	13.66%	8.19%	12.96%	18.29%	12.97%	17.60%
2238	City of Warrenton	22.49%	13.42%	18.19%	26.80%	17.62%	22.25%
2126	City of West Linn	20.48%	11.68%	16.45%	23.39%	15.80%	20.43%
2265	City of Westfir	13.67%	5.84%	10.61%	18.72%	11.23%	15.86%
2206	City of Weston	9.68%	5.37%	10.14%	14.96%	10.66%	15.29%

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	SLGRP (Default Tier 1/Tier 2 Rates)						
	City						
2147	City of Wheeler	23.58%	15.75%	20.52%	27.70%	20.21%	24.84%
2240	City of Wilsonville	20.73%	13.46%	18.23%	24.37%	17.94%	22.57%
2280	City of Winston	14.65%	4.43%	9.20%	17.80%	8.03%	12.66%
2185	City of Wood Village	20.04%	12.20%	16.97%	20.02%	15.72%	20.35%
2303	City of Woodburn	20.65%	11.98%	16.75%	24.19%	16.23%	20.86%
2300	City of Yachats	17.48%	9.93%	14.70%	20.94%	12.11%	16.74%
2214	City of Yamhill	17.71%	9.90%	14.67%	22.90%	14.88%	19.51%
2307	City of Yoncalla	17.94%	13.63%	18.40%	22.45%	18.15%	22.78%
2255	Town of Canyon City	24.20%	16.37%	21.14%	28.19%	20.70%	25.33%
2212	Town of Lakeview	13.22%	3.78%	8.55%	15.17%	6.50%	11.13%
	County						
2021	Baker County	19.00%	11.24%	16.01%	23.23%	15.49%	20.12%
2040	Benton County	16.37%	9.00%	13.77%	20.92%	13.56%	18.19%
2036	Clatsop County	16.28%	7.59%	12.36%	20.68%	12.10%	16.73%
2017	Columbia County	15.36%	7.19%	11.96%	20.74%	12.75%	17.38%
2018	Coos County	25.23%	16.67%	21.44%	29.34%	21.10%	25.73%
2044	Crook County	16.83%	5.02%	9.79%	25.74%	13.14%	17.77%
2027	Deschutes County	17.96%	9.68%	14.45%	22.27%	14.26%	18.89%
2022	Gilliam County	20.71%	13.22%	17.99%	24.78%	17.66%	22.29%
2012	Grant County	5.55%	0.43%	2.12%	8.47%	0.72%	5.35%
2004	Harney County	19.65%	11.89%	16.66%	23.86%	16.31%	20.94%
2035	Hood River County	11.08%	3.51%	8.28%	14.90%	7.71%	12.34%
2005	Jackson County	21.01%	12.96%	17.73%	25.40%	17.29%	21.92%
2042	Josephine County	23.54%	16.04%	20.81%	28.58%	20.85%	25.48%
2007	Klamath County	12.24%	0.54%	5.31%	15.92%	3.53%	8.16%
2000	Lake County	19.90%	11.61%	16.38%	24.06%	15.75%	20.38%
2043	Lincoln County	16.59%	4.23%	9.00%	21.39%	8.76%	13.39%
2009	Marion County	17.09%	8.76%	13.53%	21.18%	13.01%	17.64%
2038	Multnomah County	19.00%	10.74%	15.51%	23.25%	15.23%	19.86%
2016	Sherman County	23.22%	15.68%	20.45%	27.16%	20.24%	24.87%
2013	Umatilla County	15.94%	7.61%	12.38%	19.84%	11.46%	16.09%
2020	Wasco County	19.80%	11.52%	16.29%	24.10%	16.27%	20.90%
2011	Washington County	22.36%	14.05%	18.82%	26.73%	18.56%	23.19%
	Special Districts						
2742	Amity Fire District	19.62%	6.54%	11.31%	25.74%	12.23%	16.86%
2631	Arch Cape Water-Sanitary District	13.83%	9.52%	14.29%	18.14%	13.84%	18.47%
2602	Aumsville Rural Fire Protection District	23.12%	9.70%	14.47%	14.72%	10.42%	15.05%
2804	Aurora Rural Fire Protection District	16.34%	5.34%	10.11%	14.48%	2.77%	7.40%

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	SLGRP (Default Tier 1/Tier 2 Rates)						
	Special Districts						
2728	Baker County Library District	21.12%	13.96%	18.73%	26.00%	18.28%	22.91%
2601	Baker Valley Irrigation District	0.50%	0.43%	0.43%	0.06%	0.00%	0.00%
2749	Black Butte Ranch Police	17.61%	6.61%	11.38%	22.67%	10.96%	15.59%
2595	Canby Fire District	24.00%	12.90%	17.67%	29.54%	17.76%	22.39%
2731	Canby Utility Board	21.86%	14.18%	18.95%	25.60%	18.70%	23.33%
2840	Cannon Beach Rural Fire Protection District	24.97%	13.97%	18.74%	31.86%	18.48%	23.11%
2820	Central Oregon Coast Fire & Rescue District	16.42%	8.59%	13.36%	0.06%	0.00%	0.00%
2569	Central Oregon Intergovernmental Council	10.78%	4.97%	9.74%	11.92%	6.38%	11.01%
2563	Central Oregon Irrigation District	23.61%	16.75%	21.52%	27.21%	21.14%	25.77%
2567	Charleston Rural Fire Protection District	22.69%	9.99%	14.76%	13.21%	0.00%	3.92%
2699	Chetco Library Board	22.57%	13.57%	18.34%	26.88%	18.05%	22.68%
2745	Clackamas County Fire District	23.83%	12.01%	16.78%	28.53%	16.37%	21.00%
2761	Clackamas River Water	22.87%	17.17%	21.94%	26.71%	21.38%	26.01%
2538	Clackamas Vector Control	27.34%	19.51%	24.28%	29.19%	21.70%	26.33%
2707	Clatskanie Library	22.72%	14.51%	19.28%	26.43%	18.95%	23.58%
2526	Clatskanie PUD	26.29%	19.73%	24.50%	30.41%	23.87%	28.50%
2588	Clatskanie Rural Fire Protection District	22.81%	10.29%	15.06%	29.08%	16.01%	20.64%
2617	Clean Water Services	16.79%	9.33%	14.10%	20.40%	13.67%	18.30%
2681	Cloverdale Rural Fire Protection District	30.74%	17.32%	22.09%	35.46%	21.54%	26.17%
2801	Coburg Rural Fire Protection District	20.24%	9.25%	14.02%	26.20%	14.53%	19.16%
2649	Colton Fire Department	23.23%	9.81%	14.58%	19.97%	6.05%	10.68%
2671	Columbia 911 Communications District	19.22%	13.13%	17.90%	22.64%	17.51%	22.14%
2687	Columbia Drainage Vector Control District	31.78%	27.47%	32.24%	35.70%	31.40%	36.03%
2528	Columbia River Fire & Rescue	19.06%	7.35%	12.12%	24.33%	12.24%	16.87%
2612	Community Services Consortium	18.36%	12.26%	17.03%	22.55%	16.76%	21.39%
2860	Coos County Airport District	14.55%	10.24%	15.01%	18.91%	14.61%	19.24%
2603	Corbett Water District	21.85%	14.02%	18.79%	22.83%	18.53%	23.16%
2545	Council of Governments	20.58%	14.01%	18.78%	24.61%	18.52%	23.15%
2834	Crescent Rural Fire Protection District	20.87%	13.04%	17.81%	24.86%	17.37%	22.00%
2844	Crook County Rural Fire Protection District #1	23.60%	13.79%	18.56%	28.59%	18.34%	22.97%
2647	Crooked River Ranch Rural Fire Protection District	20.09%	12.26%	17.03%	24.94%	17.45%	22.08%
2571	Crystal Springs Water District	18.26%	13.95%	18.72%	23.31%	19.01%	23.64%
2718	Curry Library	2.98%	0.43%	3.44%	7.80%	3.50%	8.13%
2576	Depoe Bay Rural Fire Protection District	26.59%	13.17%	17.94%	32.10%	18.18%	22.81%
2642	Dexter Rural Fire Protection District	17.31%	9.48%	14.25%	21.12%	13.63%	18.26%
2851	East Umatilla County Rural Fire Protection District	21.18%	10.18%	14.95%	24.61%	12.28%	16.91%
2784	Eisenschmidt Pool	16.23%	11.92%	16.69%	20.57%	16.27%	20.90%
2557	Estacada Fire Department	12.55%	0.43%	3.90%	21.41%	7.49%	12.12%

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	SLGRP (Default Tier 1/Tier 2 Rates)						
	Special Districts						
2132	Eugene Water & Electric Board	27.51%	21.33%	26.10%	30.50%	24.94%	29.57%
2798	Fairview Water District	20.91%	11.31%	16.08%	23.01%	15.52%	20.15%
2789	Farmers Irrigation District	8.15%	0.43%	4.88%	14.48%	7.03%	11.66%
2824	Glide Fire Department	25.09%	11.67%	16.44%	31.41%	17.49%	22.12%
2573	Goshen Fire District	44.00%	36.17%	40.94%	42.08%	34.59%	39.22%
2511	Grants Pass Irrigation District	24.62%	15.02%	19.79%	28.31%	19.48%	24.11%
2765	Green Sanitary	19.45%	12.64%	17.41%	23.47%	16.97%	21.60%
2855	Harney Hospital	18.08%	11.88%	16.65%	21.79%	16.73%	21.36%
2819	Harrisburg Fire-Rescue	24.20%	13.20%	17.97%	29.48%	17.77%	22.40%
2838	High Desert Parks & Recreation District	22.27%	14.44%	19.21%	26.40%	18.91%	23.54%
2519	Home Forward	17.01%	10.94%	15.71%	20.69%	14.96%	19.59%
2607	Hoodland Fire District #74	24.25%	12.26%	17.03%	29.22%	17.18%	21.81%
2510	Horsefly Irrigation District	30.54%	22.71%	27.48%	35.56%	28.07%	32.70%
2773	Housing Authority of Jackson County	20.98%	15.69%	20.46%	25.10%	20.17%	24.80%
2886	Idanha-Detroit Rural Fire Protection District	N/A	N/A	N/A	27.70%	20.21%	24.84%
2564	Illinois Valley Fire District	17.44%	6.44%	11.21%	22.54%	10.83%	15.46%
2651	Imbler Rural Fire Protection District	27.87%	14.45%	19.22%	33.06%	19.14%	23.77%
2715	Jackson County Fire District #3	19.91%	8.34%	13.11%	24.93%	12.62%	17.25%
2620	Jackson County Fire District #4	29.17%	15.75%	20.52%	34.13%	20.21%	24.84%
2541	Jackson County Vector Control District	19.92%	12.09%	16.86%	23.64%	16.15%	20.78%
2712	Jefferson County EMS	18.71%	14.40%	19.17%	23.09%	18.79%	23.42%
2846	Jefferson County Library District	19.97%	15.06%	19.83%	24.38%	19.60%	24.23%
2561	Jefferson Rural Fire Protection District	16.47%	4.83%	9.60%	19.39%	8.80%	13.43%
2763	Junction City Fire Department	19.76%	11.19%	15.96%	26.42%	17.46%	22.09%
2559	Keizer Fire Department	22.48%	10.82%	15.59%	27.63%	15.96%	20.59%
2710	Klamath County Emergency Communications District	22.19%	15.80%	20.57%	26.41%	20.54%	25.17%
2721	Klamath Housing Authority	14.71%	10.40%	15.17%	19.65%	15.35%	19.98%
2624	Klamath Vector Control	26.19%	18.36%	23.13%	30.50%	23.01%	27.64%
2579	La Pine Rural Fire Protection District	21.45%	10.15%	14.92%	27.36%	15.50%	20.13%
2768	Lake County Library District	23.65%	14.77%	19.54%	27.11%	19.34%	23.97%
2522	Lane Council of Governments	21.46%	14.11%	18.88%	25.48%	18.77%	23.40%
2883	Lane Fire Authority	25.45%	13.38%	18.15%	30.71%	18.27%	22.90%
2849	Lebanon Aquatic District	20.88%	14.16%	18.93%	26.20%	19.02%	23.65%
2705	Lebanon Fire District	25.04%	12.16%	16.93%	29.96%	16.67%	21.30%
2753	Linn-Benton Housing Authority	13.06%	7.40%	12.17%	15.44%	10.11%	14.74%
2572	Local Government Personnel Institute	19.07%	14.76%	19.53%	26.98%	19.49%	24.12%
2700	Lowell Rural Fire Protection District	N/A	N/A	N/A	12.28%	4.79%	9.42%
2823	Lyons Fire District	23.08%	15.32%	20.09%	31.68%	24.19%	28.82%

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	SLGRP (Default Tier 1/Tier 2 Rates)						
	Special Districts						
2580	Marion County Fire District #1	28.96%	17.41%	22.18%	33.99%	21.88%	26.51%
2598	Marion County Housing Authority	0.50%	0.43%	0.43%	0.06%	0.00%	0.00%
2628	McKenzie Fire And Rescue	18.79%	7.79%	12.56%	26.19%	14.48%	19.11%
2135	McMinnville Water & Light Department	25.98%	17.01%	21.78%	24.27%	18.53%	23.16%
2592	Medford Irrigation District	21.29%	12.67%	17.44%	22.29%	15.52%	20.15%
2594	Metro	16.30%	9.71%	14.48%	20.25%	14.15%	18.78%
2663	Metropolitan Area Communications Commission	22.35%	12.75%	17.52%	25.68%	16.85%	21.48%
2811	Mid-Columbia Center For Living	20.20%	14.20%	18.97%	24.31%	18.68%	23.31%
2657	Mid-Willamette Valley Senior Service Agency	17.88%	11.51%	16.28%	22.59%	16.74%	21.37%
2853	Mill City Rural Fire Protection District	16.13%	5.13%	9.90%	20.74%	9.03%	13.66%
2752	Mist-Birkenfeld Rural Fire Protection District	8.99%	0.53%	5.30%	20.92%	9.21%	13.84%
2758	Mohawk Valley Rural Fire District	12.19%	4.36%	9.13%	18.38%	10.89%	15.52%
2568	Molalla Rural Fire Protection District #73	29.33%	17.91%	22.68%	34.01%	21.89%	26.52%
2555	Monroe Fire Department	17.73%	6.73%	11.50%	26.00%	14.29%	18.92%
2873	Mosier Fire District	9.17%	1.34%	6.11%	20.90%	9.19%	13.82%
2778	Mulino Water District #23	18.52%	14.21%	18.98%	23.03%	18.73%	23.36%
2508	Multnomah Drainage	21.06%	15.79%	20.56%	24.90%	19.79%	24.42%
2869	Nehalem Bay Fire & Rescue	29.15%	15.75%	20.52%	34.13%	20.21%	24.84%
2858	Nesika Beach-Ophir Water District	20.71%	12.41%	17.18%	20.72%	16.42%	21.05%
2716	Neskowin Water District	21.81%	13.98%	18.75%	25.99%	18.50%	23.13%
2674	Nestucca Rural Fire District	17.46%	6.44%	11.21%	23.25%	11.53%	16.16%
2818	Netarts Water District	16.31%	12.00%	16.77%	20.24%	15.94%	20.57%
2830	Netarts-Oceanside Rural Fire Protection District	24.45%	13.45%	18.22%	29.74%	18.03%	22.66%
2604	Netarts-Oceanside Sanitary District	10.99%	6.68%	11.45%	15.23%	10.93%	15.56%
2837	NORCOM	17.18%	10.70%	15.47%	21.61%	15.56%	20.19%
2781	North Bend Coos-Curry Housing Authority	57.35%	47.75%	52.52%	55.77%	48.28%	52.91%
2884	North Central Public Health District	24.57%	15.75%	20.52%	28.29%	20.21%	24.84%
2638	North Douglas County Fire and EMS	12.92%	1.59%	6.36%	26.68%	14.97%	19.60%
2793	North Lincoln Fire & Rescue District #1	23.94%	12.15%	16.92%	29.11%	17.40%	22.03%
2839	North Morrow Vector Control District	18.46%	14.15%	18.92%	22.95%	18.65%	23.28%
2792	North Wasco County Parks And Recreation District	21.10%	14.02%	18.79%	27.36%	18.53%	23.16%
2825	Northern Oregon Corrections	14.57%	6.44%	11.21%	17.65%	9.77%	14.40%
2888	Oak Lodge Water Services District	N/A	N/A	N/A	23.22%	17.65%	22.28%
2852	Ochoco Irrigation District	13.23%	8.92%	13.69%	17.41%	13.11%	17.74%
2816	Odell Sanitary District	19.27%	14.96%	19.73%	23.75%	19.45%	24.08%
2880	Oregon Health & Science University	15.48%	8.29%	13.06%	20.02%	13.35%	17.98%
2531	Oregon School Boards Association	23.53%	15.85%	20.62%	28.02%	20.31%	24.94%
2774	Oregon Trail Library District	20.77%	12.94%	17.71%	22.17%	17.88%	22.51%

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	SLGRP (Default Tier 1/Tier 2 Rates)						
	Special Districts						
2684	Parkdale Fire District	27.28%	16.28%	21.05%	32.40%	20.69%	25.32%
2694	Philomath Fire Department	21.20%	10.20%	14.97%	29.08%	17.37%	22.00%
2650	Pleasant Hill Fire Department	19.34%	11.51%	16.28%	23.77%	16.28%	20.91%
2513	Port of Coos Bay	21.17%	14.00%	18.77%	25.96%	19.09%	23.72%
2741	Port of Garibaldi	18.26%	11.49%	16.26%	23.19%	16.79%	21.42%
2625	Port of Newport	13.54%	4.61%	9.38%	13.99%	6.14%	10.77%
2512	Port of Portland	16.34%	8.79%	13.56%	20.10%	12.87%	17.50%
2501	Port of The Dalles	8.28%	2.80%	7.57%	12.55%	7.17%	11.80%
2713	Port of Tillamook Bay	18.15%	12.06%	16.83%	20.69%	16.39%	21.02%
2673	Port Orford Library	3.81%	0.43%	4.27%	15.62%	11.32%	15.95%
2542	Rainbow Water District	25.71%	16.11%	20.88%	29.29%	20.46%	25.09%
2776	Rainier Cemetery District	2.86%	0.43%	0.43%	6.79%	0.00%	3.93%
2590	Redmond Fire & Rescue	22.46%	10.70%	15.47%	27.47%	15.21%	19.84%
2549	Rogue River Fire District	20.26%	9.00%	13.77%	24.68%	13.17%	17.80%
2585	Rogue River Valley Irrigation District	28.22%	23.91%	28.68%	32.12%	27.82%	32.45%
2669	Roseburg Urban Sanitary Authority	18.32%	10.73%	15.50%	20.80%	14.56%	19.19%
2802	Rural Road Assessment District #3	18.56%	14.25%	19.02%	23.02%	18.72%	23.35%
2551	Sandy Fire Department	19.77%	8.18%	12.95%	25.08%	12.95%	17.58%
2544	Santa Clara Rural Fire Protection District	27.43%	14.01%	18.78%	33.18%	19.26%	23.89%
2709	Scappoose Public Library	15.29%	6.15%	10.92%	13.85%	6.36%	10.99%
2739	Scappoose Rural Fire Protection District	24.87%	13.38%	18.15%	30.21%	18.08%	22.71%
2605	Scio Fire District	16.00%	3.61%	8.38%	0.06%	0.00%	0.00%
2786	Seal Rock Rural Fire Protection District	N/A	N/A	N/A	15.42%	7.93%	12.56%
2734	Seal Rock Water District	17.21%	10.71%	15.48%	21.62%	15.39%	20.02%
2630	Sheridan Fire District	22.82%	11.20%	15.97%	23.81%	14.86%	19.49%
2790	Silver Falls Library District	18.84%	13.68%	18.45%	24.49%	17.64%	22.27%
2659	Silverton Fire District	22.83%	11.16%	15.93%	27.43%	15.73%	20.36%
2692	Siuslaw Public Library	17.93%	11.73%	16.50%	21.44%	16.35%	20.98%
2794	Siuslaw Rural Fire Protection District #1	28.73%	15.35%	20.12%	33.83%	19.97%	24.60%
2599	South Suburban Sanitary District	21.48%	13.89%	18.66%	25.64%	18.12%	22.75%
2766	Southwest Lincoln County Water District	18.20%	12.83%	17.60%	22.65%	17.13%	21.76%
2696	Stayton Fire District	24.45%	14.12%	18.89%	29.28%	18.47%	23.10%
2799	Sublimity Fire District	9.55%	5.24%	10.01%	13.43%	9.13%	13.76%
2641	Suburban East Salem Water District	20.90%	13.45%	18.22%	24.86%	17.09%	21.72%
2857	Sunriver Service District	17.84%	6.98%	11.75%	22.81%	11.10%	15.73%
2810	Sutherlin Water Control District	20.29%	12.46%	17.23%	24.73%	17.24%	21.87%
2847	Sweet Home Fire and Ambulance District	25.58%	13.13%	17.90%	30.53%	17.78%	22.41%
2582	Talent Irrigation District	23.82%	15.23%	20.00%	27.56%	19.59%	24.22%

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	SLGRP (Default Tier 1/Tier 2 Rates)						
	Special Districts						
2553	Tangent Rural Fire Protection District	41.76%	28.38%	33.15%	47.03%	33.03%	37.66%
2626	Tillamook Peoples Utility District	21.19%	13.80%	18.57%	24.99%	18.28%	22.91%
2864	Tri-City Water and Sanitary Authority	16.33%	12.02%	16.79%	20.87%	16.57%	21.20%
2660	Tualatin Valley Fire & Rescue	22.04%	10.48%	15.25%	27.75%	15.68%	20.31%
2587	Tualatin Valley Irrigation District	12.38%	8.07%	12.84%	19.78%	15.48%	20.11%
2842	Tualatin Valley Water District	17.78%	11.20%	15.97%	21.78%	15.65%	20.28%
2772	Umatilla County Soil & Water District	15.98%	8.15%	12.92%	18.10%	10.61%	15.24%
2732	Umatilla County Special Library District	17.08%	7.48%	12.25%	9.42%	0.59%	5.22%
2653	Umatilla Fire Department	23.96%	10.54%	15.31%	20.52%	13.03%	17.66%
2826	Wasco County Soil-Water Conservation District	13.50%	9.19%	13.96%	17.40%	13.10%	17.73%
2695	Washington County Consolidated Communications Agency	21.75%	14.74%	19.51%	25.28%	19.29%	23.92%
2540	West Extension Irrigation District	10.86%	6.55%	11.32%	16.74%	12.44%	17.07%
2867	West Multnomah Soil And Water Conservation District	20.06%	15.75%	20.52%	24.51%	20.21%	24.84%
2589	West Slope Water District	30.98%	21.38%	26.15%	33.41%	24.58%	29.21%
2606	West Valley Housing Authority	16.50%	11.56%	16.33%	19.87%	14.80%	19.43%
2754	Western Lane Ambulance District	19.68%	13.79%	18.56%	23.96%	18.33%	22.96%
2686	Weston Cemetery	8.94%	4.63%	9.40%	14.25%	6.76%	11.39%
2817	Wickiup Water District	21.72%	13.89%	18.66%	25.88%	18.39%	23.02%
2552	Winston-Dillard Fire District	36.86%	24.74%	29.51%	43.61%	31.32%	35.95%
2600	Winston-Dillard Water District	19.27%	12.87%	17.64%	23.44%	17.41%	22.04%
2676	Woodburn Fire District	31.93%	20.31%	25.08%	37.06%	24.82%	29.45%
2562	Wy'East Fire District	29.69%	18.69%	23.46%	34.24%	22.53%	27.16%
2843	Yachats Rural Fire Protection District	25.64%	14.64%	19.41%	30.81%	19.10%	23.73%
2726	Yamhill Communications Agency	20.46%	13.87%	18.64%	24.06%	18.40%	23.03%
	State						
1000	State Agencies	18.67%	10.78%	15.55%	22.24%	14.75%	19.38%

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

TIER 1/TIER 2 AND OPSRP PENSION BENEFITS
RHIA/RHIPA RETIREE MEDICAL BENEFITS

December 31, 2017 Actuarial Valuation

Prepared by:

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September 28, 2018

Retirement Board
Oregon Public Employees Retirement System

Dear Members of the Board,

As part of our engagement with the Board, we performed an actuarial valuation of the Oregon Public Employees Retirement System ("PERS" or "the System") as of December 31, 2017. Our findings are set forth in this actuarial valuation report. This report reflects the benefit provisions in effect as of December 31, 2017.

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.

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

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as 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 herein in July 2017.

Some of 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. Other actuarial computations presented in this report are for purposes of assisting the System and participating employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions as summarized in this report. This report does not include results determined under GASB Statements Nos. 67 and 68, or under GASB Statements Nos. 74 and 75, which will be provided separately. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the use and benefit of the Oregon Public Employees Retirement System.

Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. No third party recipient of Milliman's work product should rely upon this report. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The 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.

Sincerely,

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

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

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Executive Summary

Executive Summary

Milliman prepared this report for the Oregon Public Employees Retirement System to:

- Present Milliman's actuarial estimates of the system-wide liabilities and expenses of the Oregon Public Employees Retirement System (PERS), including pension benefits provided through Tier 1/Tier 2 and the Oregon Public Service Retirement Plan (OPSRP), and retiree medical benefits provided through the Retiree Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA), as of December 31, 2017 for PERS to incorporate, as PERS deems appropriate, in its financial statements; and
- Provide information on system-wide average employer contribution rates and employer contribution rates for the School District rate pool and the State and Local Government Rate Pool (SLGRP) for the biennium beginning July 1, 2019.

This valuation does not cover the defined contribution Individual Account Program (IAP). Except where otherwise explicitly noted, contribution rates in this valuation do not include contributions to the IAP. In addition, the valuation does not include an allowance for employer debt service payments on pension obligation bonds.

Summarizing a key result of this report, the system-average collared "net" employer contribution rate for the 2019-2021 biennium increased by more than 4% of payroll compared to the rate currently in effect for the 2017-2019 biennium. This increase primarily results from continued systematic rate increases over several biennia to reflect the 2015 Oregon Supreme Court ruling in *Moro v. State of Oregon*, along with rate increases resulting from updates to valuation assumptions in recent experience studies. Further discussion and explanation of the change in collared rates can be found in our August 2018 presentation materials to the PERS Board.

Of concern, even with the rate increase noted above the system-average uncollared employer contribution rate remains almost 4% of payroll above the collared rate for 2019-2021. Because of this, if actual experience is near assumption and assumptions remain unchanged in the next rate-setting valuation, we anticipate a system-average collared rate increase for the 2021-2023 biennium similar to the increase for the 2019-2021 biennium calculated in this valuation. The magnitude of such a 2021-2023 increase would differ between SLGRP employers and School District employers. This is because currently the difference between the uncollared rate and the collared base rate is greater for the SLGRP than for the School District pool, as shown later in this section of the report. In the event that long-term future experience mirrors the valuation assumptions, this increase will be needed to allow the system's unfunded liability to be systematically amortized over time by a combination of employer contributions and actual investment earnings. For more information on projections of future rate increases, we encourage readers of this report to review our financial modeling presentations to the PERS Board. The most recent such presentation was given in December 2017, and our next presentation will be at the December 2018 PERS Board meeting.

Projected Benefit Payments and the Fundamental Cost Equation

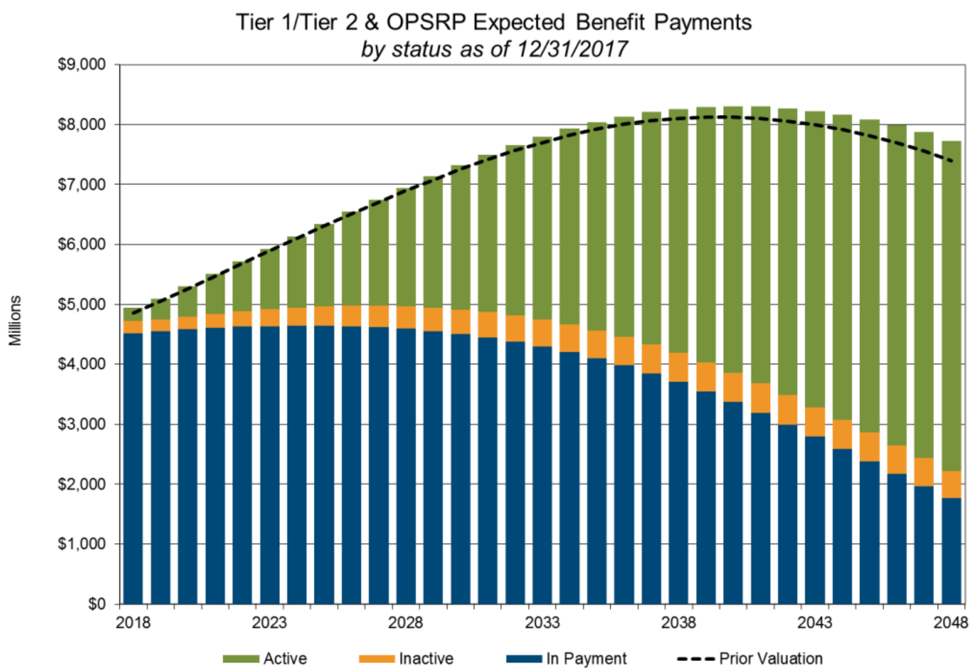
The actuarial liabilities contained in this report are calculated from a projection of benefit payments. This projection reflects the current plan provisions, assumptions, and demographic information documented herein. The stream of projected future benefit payments is converted to a net present value as of the valuation date based on the valuation's investment return assumption, which currently is 7.20%. The total net present value is then assigned to past, present, and future service according to the actuarial cost method. The portion assigned to the past is called the **actuarial accrued liability**[1], while the portion assigned to the current year is referred to as the **normal cost**.

Actuarial valuations provide a tool for measuring a System's progress towards funding its benefit obligations and adjusting budgeted contributions as appropriate to reflect changing circumstances. Even though they affect actuarial funded status and contribution rate calculations, assumptions regarding plan investment returns and participant experience do not affect the ultimate long-term cost of the program, which is governed by the **fundamental cost equation**:

Benefits + Expenses = Contributions + Investment Earnings

From a plan funding perspective, contributions are the balancing item in the equation. To the extent actual plan investment earnings underperform compared to assumption, contributions must increase to fund the defined level of benefits; if investments outperform the assumption, contributions can decrease.

The graph below illustrates projected benefit payments from the System calculated in both the current valuation and the prior valuation, organized by member status as of the actuarial valuation date. The graph includes the estimated effects on projected benefits of anticipated future service by current active members, including the assumed effects of future salary increases. The graph does not include expected benefit payments for members hired after the valuation date. The dotted line illustrates the shape of the graph from the prior valuation, which was performed as of December 31, 2016. As shown in the graph, there was little change in the projected benefits calculated in the current valuation.



[1] *Bolded terms from the Executive Summary are defined in the report glossary.*

Employer Contribution Rates

Pension Contribution Rates

This report presents system average employer contribution rates calculated as of December 31, 2017. When adopted by the PERS Board, the employer contribution rates presented will be first effective July 1, 2019. The December 31, 2015 valuation presented the employer contribution rates that were adopted by the PERS Board for July 1, 2017 through June 30, 2019.

Employer pension contribution rates consist of a normal cost rate and a rate to amortize the Unfunded Accrued Liability (UAL). Normal cost rates are calculated and charged separately to the Tier 1/Tier 2, OPSRP general service and OPSRP police and fire payrolls. UAL rates are calculated separately for Tier 1/Tier 2 and OPSRP, but each UAL rate so developed is then charged across all payrolls. Rates for individual employers are adjusted if the employer maintains a side account or has a **pre-SLGRP liability or surplus**. The table below compares the average employer contribution rates for each type of payroll calculated for this valuation to the rates in effect from July 1, 2017 through June 30, 2019.

Collared Pension Contribution Rates (Excludes IAP)						
	Effective July 1, 2019			Effective July 1, 2017		
Payroll	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Normal Cost Rate	15.27%	8.40%	13.03%	15.07%	8.02%	12.79%
Tier 1/Tier 2 UAL Rate[1]	12.19%	12.19%	12.19%	7.79%	7.79%	7.79%
OPSRP UAL Rate	1.45%	1.45%	1.45%	1.27%	1.27%	1.27%
Total Pension Rate	**28.91%**	**22.04%**	**26.67%**	**24.13%**	**17.08%**	**21.85%**
Average Adjustment[2]	(6.91%)	(6.91%)	(6.91%)	(6.62%)	(6.62%)	(6.62%)
Net Pension Rate	**22.00%**	**15.13%**	**19.76%**	**17.51%**	**10.46%**	**15.23%**

[1] *Includes Multnomah Fire District #10*

[2] *Adjustments shown are for side accounts and pre-SLGRP liabilities and are shown on system-wide average basis. For this purpose, adjustments are not assumed to be limited when an individual employer reaches a 0% contribution rate.*

Average normal cost and collared UAL rates calculated in this valuation both increased compared to the contribution rates calculated in the December 31, 2015 valuation, which produced rates effective July 1, 2017. This is primarily due to continued systematic UAL rate increases via the rate collar, the mechanics of which are detailed later in this report, along with the effect of a lower investment return assumption.

Pension contribution rates differ for each Tier 1/Tier 2 rate pool. This report calculates the specific rates for each rate pool. Tier 1/Tier 2 rates for independent employers (employers that do not participate in a Tier 1/Tier 2 rate pool) are calculated in separate reports for each employer. Changes from biennium to biennium in pension contribution rates for each rate pool (or independent employer) are confined to a **rate collar** depending on **funded status**. The table below shows the employer pension contribution rates for each Tier 1/Tier 2 rate pool calculated in this valuation compared to the rates in effect as of July 1, 2017, along with the average adjustment to those rates for side account rate offsets and for pre-SLGRP and Transition Liability/(Surplus) charges and credits.

Tier 1/Tier 2 Collared Pension Contribution Rates (Excludes IAP)				
	Effective July 1, 2019		Effective July 1, 2017	
	SLGRP	School Districts	SLGRP	School Districts
Normal Cost Rate	15.83%	13.79%	15.78%	13.28%
Tier 1/Tier 2 UAL Rate[1]	10.43%	16.73%	6.10%	12.15%
Total Pension Rate	**26.26%**	**30.52%**	**21.88%**	**25.43%**
Average Adjustment[2]	(5.68%)	(10.66%)	(5.52%)	(10.26%)
Net Pension Rate	**20.58%**	**19.86%**	**16.36%**	**15.17%**

[1] *Includes Multnomah Fire District #10*

[2] *Adjustments shown are for side accounts and pre-SLGRP liabilities and are shown on a rate pool average basis. For this purpose, adjustments are not assumed to be limited when an individual employer reaches a 0% contribution rate.*

The Tier 1/Tier 2 contribution rates shown here are after reflecting the effects of the rate collar. Due to the impact of the *Moro* decision and assumption changes (primarily lower investment return), both the SLGRP and the School District rate pool have “before collar” (or “uncollared”) contribution rates that exceed the maximum single biennium rate increase allowed by the collar. The impact of the collar adjustment for each rate pool is shown below. The contribution rate increases deferred by the rate collar will be reflected in future rate-setting periods. In other words, if all actual future experience matches or is near the assumptions in this valuation, in addition to the increases effective for the July 1, 2019 to June 30, 2021 biennium illustrated in this report, we would expect additional increases in the July 1, 2021 to June 30, 2023 biennium. As already noted previously in the table above, the “average adjustment” in the table below quantifies the effects of side accounts and pre-SLGRP liabilities on a rate pool average basis.

Collar Impact on Tier 1/Tier 2 Pension Contribution Rates		
	Effective July 1, 2019	
	SLGRP	School Districts
Total Pension Rate Before Collar	30.94%	32.45%
Collar Adjustment	(4.68%)	(1.93%)
Total Pension Rate After Collar	**26.26%**	**30.52%**
Average Adjustment	(5.68%)	(10.66%)
Net Pension Rate	**20.58%**	**19.86%**

Retiree Healthcare Contribution Rates

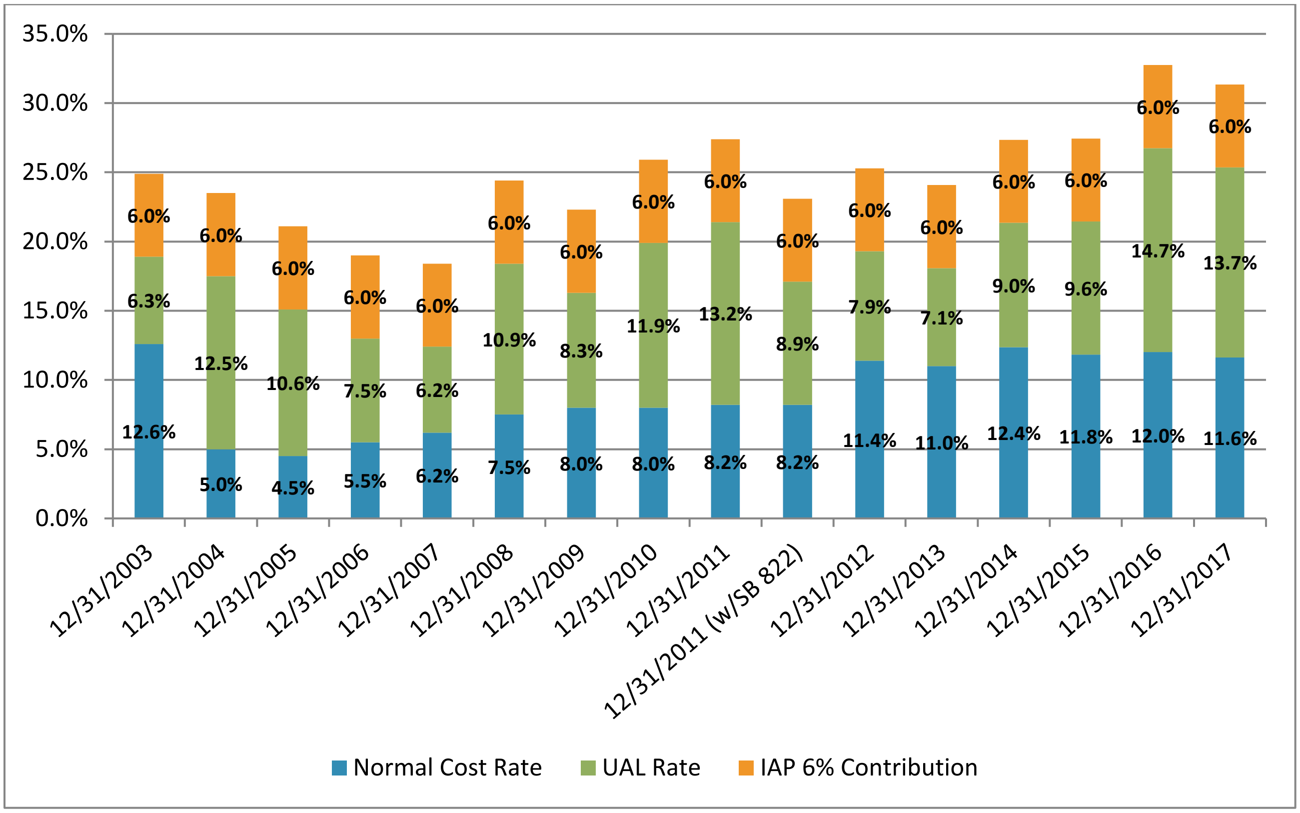
In addition to the pension contribution rates, all employers contribute to the Retirement Health Insurance Account (RHIA). Further, State Agencies and State Judiciary also contribute to the Retiree Health Insurance Premium Account (RHIPA). Only Tier 1 and Tier 2 members are eligible for these benefits, so the normal cost rates are only charged to Tier 1/Tier 2 payroll, but the UAL rates are charged to all payrolls. For each type of payroll used in this valuation the table below compares the employer contribution rates calculated in this valuation to the rates in effect from July 1, 2017 through June 30, 2019. The funded status for both retiree healthcare programs has historically lagged those of the defined benefit pension programs. In response to this, the UAL on the retiree healthcare programs is amortized over a ten-year period, which is shorter than the pension program amortization periods, in an effort to more rapidly improve funded status. Funded status for both programs have materially improved since the amortization change was implemented, with the funded status for the larger RHIA program now above 100%. With its funded status over 100%, the RHIA UAL contribution rate was set to 0.00% of payroll for 2019-2021, a decrease of 0.43% of payroll from the UAL rate in effect for the 2017-2019 biennium.

Retiree Healthcare Contribution Rates						
	Effective July 1, 2019			Effective July 1, 2017		
Payroll	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
RHIA Normal Cost Rate	0.06%	0.00%	0.00%	0.07%	0.00%	0.00%
RHIA UAL Rate	0.00%	0.00%	0.00%	0.43%	0.43%	0.43%
Total RHIA rate	**0.06%**	**0.00%**	**0.00%**	**0.50%**	**0.43%**	**0.43%**
RHIPA Normal Cost Rate	0.12%	0.00%	0.00%	0.11%	0.00%	0.00%
RHIPA UAL Rate	0.27%	0.27%	0.27%	0.38%	0.38%	0.38%
Total RHIPA rate	**0.39%**	**0.27%**	**0.27%**	**0.49%**	**0.38%**	**0.38%**

Combined Pension and Retiree Healthcare Contribution Rates

The system-wide average combined pension and retiree healthcare contribution rates are shown below for each valuation since December 31, 2003. As shown below, the average normal cost rate declined dramatically after the 2003 valuation, primarily due to the change in the actuarial cost method from entry age normal (EAN) to projected unit credit (PUC) made in the December 31, 2004 valuation. The PUC method allocates benefits projected to be paid under the Money Match formula to past service with a 0% normal cost allocation to current year service. As additional long-service Tier 1 members retired under the Money Match formula, the normal cost rate gradually increased over the subsequent valuations. A change back to EAN in the December 31, 2012 valuation increased the normal cost rate, as the EAN method allocates a portion of benefits projected to be paid under the Money Match formula to current year service. The system-wide average normal cost rate is now expected to drift down gradually in the future toward the OPSRP normal cost rate (currently 8.92%) as new OPSRP members replace retiring Tier 1 and Tier 2 members. The OPSRP normal cost rate is expected to increase slowly over time due to anticipated improvements in life expectancy. The average UAL rate increased since the prior rate-setting valuation as of December 31, 2015, primarily due to the effects of continued recognition of collared UAL rate increases and the change to the investment return assumption.

System-Wide Average Collared Base Contribution Rates – Combined Pension and Retiree Healthcare



For an individual employer, base pension rates are adjusted for side account rate offsets to develop net pension rates paid by the employer. Side accounts are the result of employer supplemental deposits, typically financed through a pension obligation bond. When a supplemental deposit is made, a side account is established (after any Transition Liabilities related to joining the SLGRP have been paid) and used to offset the otherwise required contribution. As of December 31, 2017, the system has approximately $5.6 billion in unamortized side accounts, slightly higher than last year. At a system-average level, side accounts now reduce employer contribution rates by 6.51% of payroll, but there is wide variation between employers.

For individual employers in the SLGRP, the rates shown above are also adjusted for amortization payments on pre-SLGRP liabilities. The average adjustment to individual employer rates due to side accounts and pre-SLGRP liabilities is shown on a combined basis in the table on page 4.

Limits on Future Pension Contribution Rates

The minimum and maximum rates that can be effective July 1, 2021 for each Tier 1/Tier 2 rate pool (prior to adjustments) are shown in the table below. The limits are calculated and applied on an individual employer basis for independent employers. The contribution rates for employers in Tier 1/Tier 2 pooling arrangements (i.e., the SLGRP and School Districts rate pool) are adjusted from the rates of the pool to reflect side account rate offsets, charges or credits for pre-SLGRP liabilities, and adjustments to the normal cost rates of SLGRP employers to reflect the employer's ratio of general service to police and fire payroll. These adjustments are not limited by the rate collar.

The size of the rate collar depends on the funded status of a rate pool or employer. When funded status is less than 60 percent or above 140 percent, the size of the rate collar is twice the size of the "single collar" that applies when funded status is between 70 percent and 130 percent. The rate collar provides a graded schedule between the single and double rate collars if the funded status, excluding side accounts, is between 60% and 70% or 130% and 140%.

Limits on Future Tier 1/Tier 2 Pension Contribution Rates		
	Effective July 1, 2021	
	SLGRP	School Districts
Between 70% and 130% Funded		
Minimum Rate	21.01%	24.42%
Maximum Rate	31.51%	36.62%
Less than 60% or Greater than 140% Funded		
Minimum Rate	15.76%	18.32%
Maximum Rate	36.76%	42.72%

For Rate Pools funded between 60% and 70% or between 130% and 140% the limits vary linearly between the rates shown above.

Funded Status

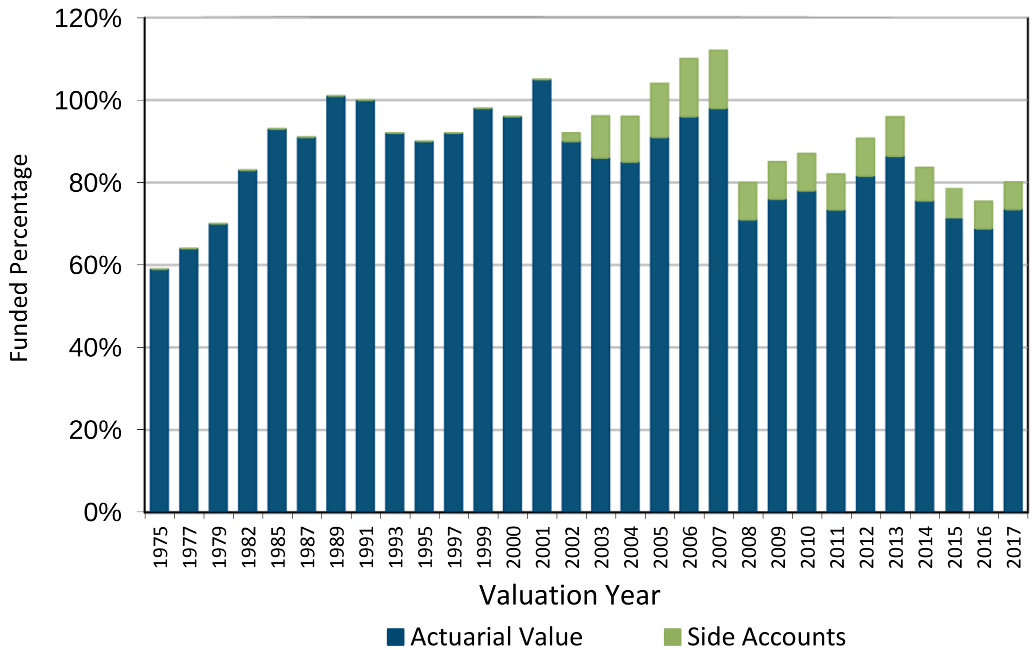
The table below shows the funded status of the various pension rate pools both on the basis used to calculate the contribution rate for each rate pool and after adjustment for side accounts (assuming side accounts offset Tier 1/Tier 2 liabilities). For this exhibit, all independent employers, including State Judiciary, have been grouped together.

	SLGRP	School Districts	Independent Employers	OPSRP	Pension System Totals[1]
December 31, 2017					
Actuarial accrued liability	$42,150.7	$29,677.4	$6,536.3	$5,634.7	$84,056.1
Actuarial value of assets	$30,899.7	$21,924.7	$4,932.9	$4,116.5	$61,764.9
Funded status	**73.3%**	**73.9%**	**75.5%**	**73.1%**	**73.5%**
Side accounts	$2,466.3	$3,009.7	$85.3	$0.0	$5,561.2
Funded status reflecting side accounts	**79.2%**	**84.0%**	**76.8%**	**73.1%**	**80.1%**
December 31, 2016					
Actuarial accrued liability	$40,351.3	$29,152.2	$6,690.8	$4,717.0	$80,970.3
Actuarial value of assets	$28,032.6	$19,952.9	$4,770.0	$3,021.4	$55,670.2
Funded status	**69.5%**	**68.4%**	**71.3%**	**64.1%**	**68.8%**
Side accounts	$2,385.0	$2,917.2	$86.6	$0.0	$5,388.8
Funded status reflecting side accounts	**75.4%**	**78.5%**	**72.6%**	**64.1%**	**75.4%**

Amounts in millions

[1] *Includes Multnomah Fire District #10*

As shown in the graph below, the funded status of the system generally improved until the market decline of 2000-2002. After the decline, funded status generally improved for several years due to better than expected investment returns until 2008, when it decreased significantly due to investment losses. Funded status then improved through the December 31, 2013 valuation due to legislative changes in plan provisions and investment gains during 2012 and 2013. Funded status declined in the December 31, 2014 valuation due to the combined effects of the *Moro* decision and assumption changes. It continued decreasing in subsequent years due to the combined effects of investment losses and adoption of a lower assumed rate of return, but improved in the current valuation due to 2017 investment returns.



The retiree medical benefits are funded using a 401(h) account within the pension trust. The table below shows the funded status of the retiree medical programs. The funded status of the RHIA and RHIPA programs improved since the prior valuation due the effects of investment returns, employer contributions, and actual member plan election experience.

	December 31, 2017			December 31, 2016		
	RHIA	RHIPA	Total	RHIA	RHIPA	Total
Actuarial accrued liability	$437.6	$69.4	$506.9	$463.7	$67.9	$531.6
Actuarial value of assets	$553.3	$29.8	$583.1	$465.0	$19.1	$484.1
Funded status	**126.4%**	**43.0%**	**115.0%**	**100.3%**	**28.1%**	**91.1%**

Amounts in millions

Asset Changes

Since December 31, 2016, contributions (including supplemental deposits but excluding side account rate offset transfers) for pension benefits have increased assets by 2.0% while benefit payments decreased assets by about 7.2%. On the whole, assets increased by 9.6%, since the investment returns of approximately 14.8% (including a $534 million transfer from the Contingency Reserve) were enough to offset the system's negative cash flow position.

	Amount	Percentage of Beginning Market Value
Market Value of Assets, December 31, 2016	**$63,232.2**	
Contributions	1,255.9	2.0%
Investment Income (less administrative expenses)	9,375.1	14.8%
Benefit Payments	(4,546.8)	(7.2%)
Market Value of Assets, December 31, 2017	**$69,316.4**	**109.6%**

Amounts in millions

The Tier 1 Rate Guarantee Reserve that is used to pay for the interest crediting rate guarantee on active Tier 1 member accounts when actual investment earnings are below the assumed rate has increased from a reserve of $181 million as of December 31, 2016 to a reserve of $511 million as of December 31, 2017 due to investment performance and Tier 1 retirement patterns in 2017. Tier 1 non-retired member accounts that are linked to the Rate Guarantee Reserve decreased from $4.8 billion on December 31, 2016 to $4.1 billion on December 31, 2017 due to retirements during the year of Tier 1 active members.

Market values are reported to Milliman by PERS. It is our understanding that the December 31 market values of select real estate and private equity investments are reported on a three-month lag basis. This valuation report does not attempt to quantify the impact of any such lag effects.

Liability Changes

Since December 31, 2016, the system-wide actuarial accrued liability has increased primarily due to the interest on the liability as current active members get closer to retirement. The normal cost, or the present value of projected future benefits for active members allocated to that year of service, was about one-quarter of the value of benefits paid out during the year. The remaining increase in the actuarial accrued liability was attributable to demographic experience, which includes actual experience differing from assumption, data corrections, and the effect of new members joining the system during the year. The largest demographic experience effects in descending order of magnitude resulted from data corrections, pay increases differing from assumption, active retirement rates differing from assumption, interest crediting on member account balances differing from assumption, and new members entering the system.

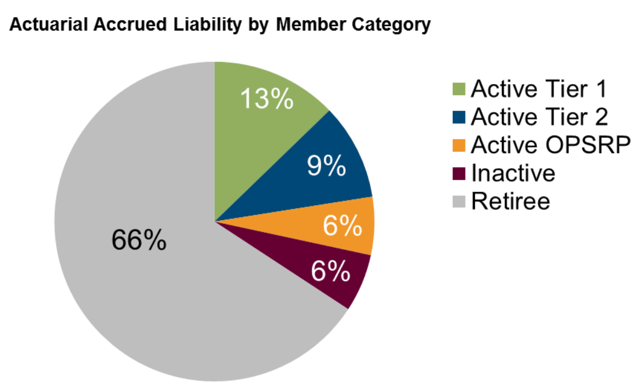
	Amount	Percentage of Beginning AAL
Actuarial Accrued Liability, December 31, 2016	**$81,501.8**	
Normal Cost	1,141.4	1.4%
Benefit Payments	(4,546.8)	(5.6%)
Interest	5,745.5	7.0%
Assumption & Method Changes	0.0	0.0%
Plan Changes	0.0	0.0%
Demographic Experience	721.1	0.9%
Actuarial Accrued Liability, December 31, 2017	**$84,563.0**	**103.8%**

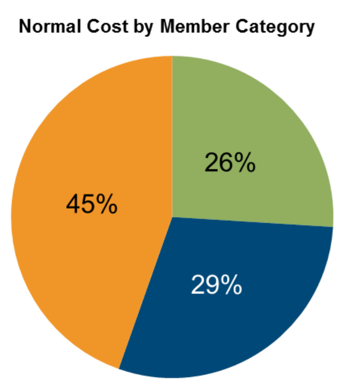
Amounts in millions

The Oregon Public Employees Retirement System is a mature system. There are currently 1.19 active members in the system for every annuitant (including retired members and beneficiaries). By comparison, the average ratio in NASRA's November 2017 Public Fund Survey is 1.42. Since contributions to the system are based on active payroll, a lower active-to-annuitant ratio means there are fewer active member payroll dollars to support any actuarial gains or losses, such as for investment experience varying from assumption, in comparison to peer systems. The ratio of active members to annuitants may decline further as a significant portion of the active members are currently eligible to retire.

The left-hand chart below illustrates the distribution of the system's actuarial accrued liability by member pension tier and status. While the majority of active liability is attributable to Tier 1 members, 72% of the system's total actuarial accrued liability is due to members who are no longer actively working in covered employment. Only 15% of the liability is attributable to active Tier 2 and OPSRP members. Of the actuarial accrued liability that is attributable to actives, a large portion is located at or near prime retirement ages.

The right-hand chart below illustrates the distribution of the system's normal cost. Tier 2 members account for 29% of the system's normal cost compared to about 9% of the system's actuarial accrued liability. OPSRP members account for 45% of the normal cost compared to just 6% of the actuarial accrued liability.



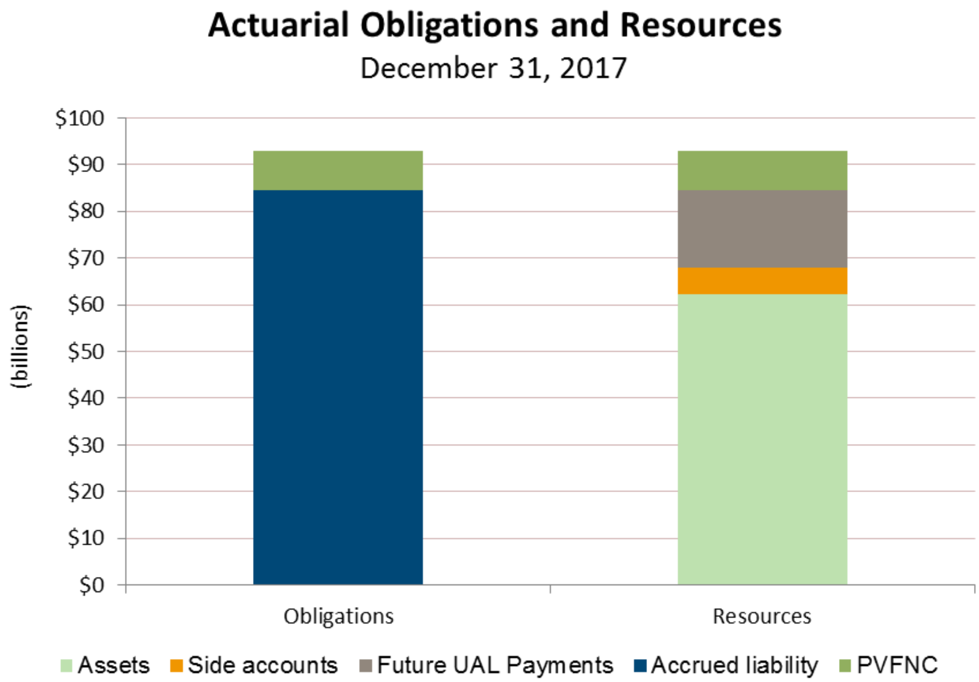


Actuarial Obligations and Resources

The actuarial accrued liability discussed above is the present value of benefits allocated to past service by the actuarial cost allocation method. The **total actuarial present value of benefits** (also referred to as "total liability") is a broader measure that reflects both the actuarial accrued liability and the **present value of future**

normal cost (PVFNC) for current members. Conceptually, the total actuarial present value of benefits can be thought of as the total expected benefit obligation, in today's dollars, associated with members as of the valuation date for service throughout their working careers, including assumed service subsequent to the actuarial valuation date. As of December 31, 2017, the total actuarial present value of benefits for the system was $92.9 billion.

The resources to fund this expected obligation include assets the system has set aside as of the valuation date, plus the present value of expected future contributions to normal cost and UAL payments. By definition, the resources and obligations are equal in this "actuarial balance sheet", as shown in the graph below.



Contributions to future normal costs and UAL payments are made as a percent of subject member salary, known as valuation payroll. The table below shows the amount of projected salary in the year following the valuation date as well as the present value of all future projected salary amounts for members included in the valuation.

	Projected Valuation Payroll for Year Subsequent to Valuation Date	Present Value of Future Valuation Payroll[1]
Tier 1/Tier 2	$4,246.9	$26,094.7
OPSRP General Service	5,187.5	49,568.2
OPSRP Police & Fire	664.5	8,158.7
Total	**$10,098.9**	**$83,821.7**

Amounts in millions

[1] *For members as of the valuation date.*

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 after the summary. **Combined valuation payroll** is the projected Tier 1/Tier 2 payroll plus OPSRP payroll for the calendar year subsequent to the actuarial valuation date.

	Actuarial Valuation as of		
	December 31, 2017	December 31, 2016	Percent Change
Tier 1/Tier 2 Pension			
Actuarial accrued liability	$78,421.4	$76,253.3	3%
Actuarial value of assets	$57,648.4	$52,648.8	9%
Unfunded actuarial accrued liability	$20,773.0	$23,604.4	(12%)
Funded status	74%	69%	
UAL as a percentage of payroll	206%	239%	
Normal cost	$648.7	$697.4	(7%)
Tier 1/Tier 2 valuation payroll	$4,246.9	$4,516.7	(6%)
Normal cost rate	15.27%	15.44%	
OPSRP Pension			
Actuarial accrued liability	$5,634.7	$4,717.0	19%
Actuarial value of assets	$4,116.5	$3,021.4	36%
Unfunded actuarial accrued liability	$1,518.2	$1,695.6	(10%)
Funded status	73%	64%	
UAL as a percentage of payroll	15%	17%	
Normal cost	$522.2	$483.5	8%
OPSRP valuation payroll	$5,852.0	$5,355.8	9%
Normal cost rate	8.92%	9.03%	
Combined Pension			
Actuarial accrued liability	$84,056.1	$80,970.3	4%
Actuarial value of assets	$61,764.9	$55,670.2	11%
Unfunded actuarial accrued liability	$22,291.2	$25,300.1	(12%)
Funded status	73%	69%	
Combined valuation payroll	$10,098.9	$9,872.6	2%
UAL as a percentage of payroll	221%	256%	
Normal cost	$1,170.9	$1,180.9	(1%)
Combined valuation payroll	$10,098.9	$9,872.6	2%
Normal cost rate	11.59%	11.96%	

Amounts in millions

	Actuarial Valuation as of		
	December 31, 2017	December 31, 2016	Percent Change
RHIA			
Actuarial accrued liability	$437.6	$463.7	(6%)
Actuarial asset value	$553.3	$465.0	19%
Unfunded actuarial accrued liability	($115.7)	($1.3)	8,508%
Funded status	126%	100%	
Combined valuation payroll	$10,098.9	$9,872.6	2%
UAL as a percentage of payroll	(1%)	(0%)	
Normal cost	$2.5	$3.0	(16%)
Tier 1/Tier 2 valuation payroll	$4,246.9	$4,516.7	(6%)
Normal cost rate	0.06%	0.07%	
RHIPA			
Actuarial accrued liability	$69.4	$67.9	2%
Actuarial asset value	$29.8	$19.1	56%
Unfunded actuarial accrued liability	$39.5	$48.8	(19%)
Funded status	43%	28%	
Combined valuation payroll	$2,984.5	$2,881.4	4%
UAL as a percentage of payroll	1%	2%	
Normal cost	$1.4	$1.5	(3%)
Tier 1/Tier 2 valuation payroll	$1,212.2	$1,276.0	(5%)
Normal cost rate	0.12%	0.12%	

Amounts in millions

Data Summary

A brief summary of the data underlying the current and prior valuations follows. As shown below, the active member count increased about 0.3%, while the system's total member population increased by about 2.0%. The data section of this report provides additional detail. State Judiciary is included in the Tier 1 counts.

	December 31, 2017				December 31, 2016
	Tier 1	Tier 2	OPSRP	Total	Total
Active Members					
Count	22,749	35,958	114,295	173,002	172,483
Average age	56.1	51.2	42.7	46.2	46.4
Average total service	25.2	16.9	6.1	10.9	11.1
Average prior year covered salary	$78,492	$70,429	$48,405	$56,939	$56,140
Inactive Members[1]					
Count	13,188	15,166	17,349	45,703	45,321
Average age	59.5	53.6	47.5	53.0	53.4
Average monthly deferred benefit	$2,068	$772	$406	$1,007	$1,053
Retired Members and Beneficiaries[1]					
Count	127,687	13,180	4,115	144,982	138,783
Average age	72.3	67.5	66.8	71.7	71.6
Average monthly benefit[2]	$2,817	$1,004	$478	$2,586	$2,521
Total Members	**163,624**	**64,304**	**135,759**	**363,687**	**356,587**

[1] *Inactive and Retiree counts are shown by lives within the system. In other words, a member is counted once for purposes of this exhibit, regardless of their service history for different rate pools. This contrasts with the method used to count inactive participants in some of the later exhibits of this report.*

[2] *The average monthly benefit reflects an estimated adjustment for the effect of the Supreme Court decision in Moro v. State of Oregon for records that were not already adjusted in the data provided.*

Effects of Changes

Effective with the December 31, 2017 actuarial valuation the following changes were made:

Assumption Changes

There were no changes to actuarial assumptions since the December 31, 2016 actuarial valuation.

Method Changes

There were no changes to actuarial methods since the December 31, 2016 actuarial valuation.

Plan Changes

There were no changes to plan provisions since the December 31, 2016 actuarial valuation.

System-Wide Assets

System-Wide Assets

The table below reconciles the market value of assets, as provided by PERS, to the asset values used in this valuation.

	Tier 1/Tier 2	OPSRP	Side Accounts	Contingency and Capital Preservation Reserve	Rate Guarantee Reserve	RHIA and RHIPA	System Totals
Amount reported by PERS December 31, 2017	$58,495.1	$4,116.5	$5,561.2	$50.0	$510.5	$583.1	$69,316.4
Adjustment for Recognized Transition Liability Receivable	(510.1)	0.0	0.0	0.0	0.0	0.0	(510.1)
Adjustment for Negative Rate Guarantee Reserve	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Pre-SLGRP Liabilities	(336.6)	0.0	0.0	0.0	0.0	0.0	(336.6)
December 31, 2017 Actuarial Value of Assets	$57,648.4	$4,116.5	$5,561.2	$50.0	$510.5	$583.1	$68,469.7

Amounts in millions

PERS calculates the amount that should be transferred from side accounts to employer reserves in Tier 1/ Tier 2 and OPSRP for rate relief on a monthly basis. PERS does not track net Pre-SLGRP liabilities.

Employer supplemental deposits establish individual side accounts within the pension trust. The side accounts are treated as prepaid contributions. Employer contribution rates are first determined excluding side accounts. Then, an amortized portion of the side account is used to offset the contribution otherwise required for the individual employers that have side accounts. While side accounts are excluded from valuation assets in determining contribution rates for each of the rate pools, side accounts are included in valuation assets for financial reporting purposes such as the reporting of funded status.

In addition, pension assets are held in the Contingency Reserve, the Capital Preservation Reserve, and the Tier 1 Rate Guarantee Reserve (RGR). As shown below, at December 31, 2017 the RGR was in surplus status of $511 million. It is possible for the RGR to be in deficit at its year-end measurement date, which occurred most recently at December 31, 2012. It is our understanding that if a RGR deficit arose and then persisted for five years, employers may be required to restore the Tier 1 Rate Guarantee Reserve.

Tier 1/Tier 2 assets are adjusted by the net outstanding balance of pre-SLGRP liabilities to arrive at the actuarial value of assets. These notional employer-specific balances, created at the formation of the SLGRP and at later dates when additional employers join the pool, are treated akin to receivables to the SLGRP from individual employers (for pre-SLGRP liabilities) or payables – in the form of future rate offsets – from the SLGRP assets to individual employers (for pre-SLGRP surpluses). For accounting purposes, PERS recognizes outstanding pre-SLGRP liabilities as receivables in the system financial statements. However, for funding purposes, future contributions associated with pre-SLGRP liabilities are not current assets of the system. The resulting adjustment for Transition Liability receivables is shown above.

Finally, assets are held in separate accounts established under Internal Revenue Code Section 401(h) (the Retirement Health Insurance Account (RHIA) and the Retiree Health Insurance Premium Account (RHIPA)) to provide retiree medical benefits.

Reconciliation of Pension and Retiree Healthcare Assets

The following table reconciles the changes in the system-wide assets from December 31, 2016 to December 31, 2017. The reconciliation of assets is provided by PERS.

	Tier 1/Tier 2	OPSRP	Side Accounts	Contingency Reserve	Capital Preservation Reserve	Rate Guarantee Reserve	RHIA and RHIPA	System Totals
Additions								
1. Contributions								
a. Employer	$579.3	$571.1	$29.0	-	-	-	$61.8	$1,241.2
b. Transfer from side accounts[1]	$652.8	-	($652.8)	-	-	-	-	-
c. Judge member contributions	$1.8	-	-	-	-	-	-	$1.8
d. Member service purchases	$12.9	-	-	-	-	-	-	$12.9
e. Recognized transition liability receivable	-	-	-	-	-	-	-	-
f. Total	**$1,246.8**	**$571.1**	**($623.8)**	**-**	**-**	**-**	**$61.8**	**$1,255.9**
2. Net investment income								
a. Transfers	$533.7	-	-	($533.7)	-	-	-	-
b. From investments	$7,658.4	$554.6	$796.3	-	-	$329.7	$75.7	$9,414.7
c. Total	**$8,192.1**	**$554.6**	**$796.3**	**($533.7)**	**-**	**$329.7**	**$75.7**	**$9,414.7**
3. Other[2]	$3.1	$0.0	-	-	-	-	-	$3.1
4. Total additions	**$9,442.0**	**$1,125.6**	**$172.5**	**($533.7)**	**-**	**$329.7**	**$137.5**	**$10,673.7**
Deductions								
5. Retirement and survivor benefits	($4,467.1)	($24.6)	-	-	-	-	($37.0)	($4,528.7)
6. Death Benefits	($3.7)	-	-	-	-	-	-	($3.7)
7. Refund of contributions	($14.4)	-	-	-	-	-	-	($14.4)
9. Administrative expenses	($35.1)	($5.9)	($0.1)	-	-	-	($1.5)	($42.7)
10. Total deductions	**($4,520.3)**	**($30.5)**	**($0.1)**	**-**	**-**	**-**	**($38.6)**	**($4,589.5)**
11. Net change	**$4,921.7**	**$1,095.1**	**$172.4**	**($533.7)**	**-**	**$329.7**	**$99.0**	**$6,084.2**
12. Net assets held in trust for pension benefits								
a. Beginning of year	$53,573.4	$3,021.4	$5,388.8	$583.7	-	$180.8	$484.1	$63,232.2
b. End of year	**$58,495.1**	**$4,116.5**	**$5,561.2**	**$50.0**	**-**	**$510.5**	**$583.1**	**$69,316.4**

Amounts in millions

[1] *Side account transfers shown in this exhibit are all credited to Tier 1/Tier 2 assets. We understand the portion to be credited to OPSRP is credited through the employer contribution line of the exhibit.*

[2] *Includes TRFA transfer from Metlife and adjustments by PERS.*

Reconciliation of Side Accounts

Side accounts are established for employers who make supplemental payments (a lump sum payment in excess of the required employer contribution). For SLGRP employers, this supplemental payment is first applied toward the employer's Transition Liability, if any, and any excess is established in a Side Account. A reconciliation of the side accounts from December 31, 2016 to December 31, 2017, is shown below on a rate pool basis. For this exhibit, all independent employers are grouped together.

	SLGRP	School Districts	Independent Employers	System Totals
Side Accounts, December 31, 2016	**$2,385.0**	**$2,917.2**	**$86.6**	**$5,388.8**
Deposits during 2017	25.0	3.0	1.0	29.0
Interest	353.3	430.1	12.9	796.3
Administrative expenses	(0.0)	(0.1)	(0.0)	(0.1)
Transfers to employer reserves	(302.1)	(340.6)	(10.0)	(652.8)
Side Accounts, December 31, 2017	**$2,461.2**	**$3,009.7**	**$90.4**	**$5,561.2**
Side accounts for new SLGRP employers	5.1		(5.1)	0.0
Side Accounts, January 1, 2018	**$2,466.3**	**$3,009.7**	**$85.3**	**$5,561.2**

Amounts in millions

Development of Side Account Rate Relief

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 on or before December 31, 2009, the fixed period ends December 31, 2027. For side accounts established later, the fixed period ends 18 years after the first rate-setting valuation following its creation. The table below shows the average rate relief attributable to side accounts for each rate pool. While results are shown at a rate pool level, the rate relief provided by side accounts varies from employer to employer.

	December 31, 2017			
	SLGRP	School Districts	Independent Employers	System Totals
1. Side Account	$2,466.3	$3,009.7	$85.3	$5,561.2
2. Combined valuation payroll	$5,897.8	$3,314.2	$886.9	$10,098.9
3. Average Amortization Factor[1]	8.387	8.519	8.518	8.460
4. Average Side Account Rate Relief *(1. ÷ 2. ÷ 3.)*	**4.99%**	**10.66%**	**1.13%**	**6.51%**

Amounts in millions

[1] *Weighted average*

Pension Plan Valuation

Tier 1/Tier 2 Pension Assets

Summary of Actuarial Value of Assets

This section summarizes the Tier 1/Tier 2 pension valuation assets as of the current and prior actuarial valuation. For valuation purposes, Tier 1/Tier 2 pension assets are divided among the State & Local Government Rate Pool (SLGRP), the School Districts rate pool, and various independent employers to determine employer contribution rates. For this system-wide report, all independent employers, including State Judiciary, have been grouped together as if they were a rate pool.

	SLGRP	School Districts	Independent Employers	Tier 1/Tier 2 Totals[1]
December 31, 2017				
Member reserves	$3,327.3	$1,808.7	$449.8	$5,585.9
Employer reserves	15,393.8	10,337.6	2,534.6	28,132.0
Benefit in force reserves	12,515.2	9,778.4	1,948.5	24,267.2
Net outstanding pre-SLGRP liabilities	(336.6)			(336.6)
Total actuarial value of assets	**$30,899.7**	**$21,924.7**	**$4,932.9**	**$57,648.4**
December 31, 2016				
Member reserves	$3,665.3	$1,977.8	$525.1	$6,168.1
Employer reserves	13,754.5	8,969.8	2,402.3	24,994.9
Benefit in force reserves	10,999.7	9,005.4	1,842.7	21,872.7
Net outstanding pre-SLGRP liabilities	(386.8)			(386.8)
Total actuarial value of assets	**$28,032.6**	**$19,952.9**	**$4,770.0**	**$52,648.8**

Amounts in millions

[1] *Includes Multnomah Fire District #10.*

Pre-SLGRP liabilities and surpluses are notional balances specific to individual employers or groups of employers. For contribution rate calculations, pre-SLGRP liabilities are treated akin to receivables to the SLGRP from the individual employers and pre-SLGRP surpluses are treated akin to payables (in the form of future rate offsets) from the SLGRP assets to individual employers. The assets of the SLGRP used to calculate the pooled contribution rate reflect the net outstanding balance of these items.

Side accounts are treated as pre-paid contributions. Consequently, they are not reflected in the actuarial value of assets shown above. The actuarial value of assets for each rate pool is used to develop the contribution rate for that pool. Side accounts are used by employers to pay a portion of the base contribution rate via a side account rate offset and deduction mechanism. The net impact of side accounts is shown in a separate section of this report.

Reconciliation of Actuarial Value of Assets

The table below shows a reconciliation of the actuarial value of assets from the prior valuation to the current valuation for each of the rate pools. Again, independent employers, including State Judiciary, are treated as if they were a single rate pool for purposes of the system-wide report.

	SLGRP	School Districts	Independent Employers	Tier 1/Tier 2 Totals[1]
Actuarial value of assets, December 31, 2016	**$28,032.6**	**$19,952.9**	**$4,770.0**	**$52,648.8**
Contributions				
Employer	$397.1	$178.4	$85.1	$660.6
Side account transfers	302.1	340.6	10.0	652.8
Member	0.0	0.0	1.8	1.8
Total contributions	**$699.2**	**$519.0**	**$97.0**	**$1,315.2**
Investment income	4,002.3	2,852.6	682.0	7,517.0
Benefit payments and expenses	(2,305.4)	(1,821.5)	(388.9)	(4,520.4)
Adjustments[2]	170.5	421.6	40.4	654.9
Actuarial value of assets, December 31, 2017	**$30,599.3**	**$21,924.7**	**$5,200.5**	**$57,615.6**
Employers joining the SLGRP	300.4		(267.6)	32.9
Actuarial value of assets, January 1, 2018	**$30,899.7**	**$21,924.7**	**$4,932.9**	**$57,648.4**

Amounts in millions

[1] Includes Multnomah Fire District #10.

[2] Adjustments include a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, member service purchases, an employer merger, and other adjustments made by PERS.

Employers Joining the SLGRP

Effective January 1, 2018, one independent employer joined the State & Local Government Rate Pool (SLGRP). The employer's experience through December 31, 2017 was maintained independently, but its liabilities and assets are included with the SLGRP in this report in order to develop contribution rates that will become effective July 1, 2019. The table below summarizes the changes to assets and liabilities for the SLGRP due to this employer joining the SLGRP. Note that, by design, the UAL as a percentage of payroll does not change for the SLGRP, ensuring the SLGRP's UAL rate is not affected by employers joining the pool. This is accomplished by calculating a Transition Liability/(Surplus) for each new employer joining the pool.

	State & Local Government Rate Pool		
Tier 1/Tier 2 Pension	**December 31, 2017**	**Employers Joining Pool**	**January 1, 2018**
Actuarial Accrued Liability			
Active Members			
Tier 1 General Service	$5,080.3	$19.5	$5,099.8
Tier 1 Police & Fire	1,162.4	0.0	1,162.4
Tier 1 Total	**6,242.7**	**19.5**	**6,262.2**
Tier 2 General Service	3,362.6	26.7	3,389.3
Tier 2 Police & Fire	1,304.5	0.0	1,304.5
Tier 2 Total	**4,667.1**	**26.7**	**4,693.8**
Total Active Members	**$10,909.8**	**$46.2**	**$10,956.0**
Inactive Members	**2,831.4**	**15.2**	**2,846.7**
Retired Members and Beneficiaries	**28,032.9**	**315.1**	**28,348.0**
Total Actuarial Accrued Liability	**$41,774.2**	**$376.6**	**$42,150.7**
Actuarial Value of Assets			
Member reserves	$3,316.2	$11.1	$3,327.3
Employer reserves	15,276.5	117.3	15,393.8
Benefit in force reserves	12,376.1	139.1	12,515.2
Net outstanding pre-SLGRP liabilities	(369.5)	32.9	(336.6)
Total Actuarial Value of Assets	**$30,599.3**	**$300.4**	**$30,899.7**
Unfunded Accrued Liability	**$11,174.9**	**$76.1**	**$11,251.0**
Funded Percentage	73.2%	79.8%	73.3%
Combined Valuation Payroll	$5,857.9	$39.9	$5,897.8
Unfunded Accrued Liability as % of Combined Valuation Payroll	**190.8%**	**190.8%**	**190.8%**

Amounts in millions

Outstanding Balance of Pre-SLGRP Liabilities

In the valuation, pre-SLGRP liabilities are treated as assets of the SLGRP. That is, a pre-SLGRP liability is treated as a receivable owed to the SLGRP by the employer. Pre-SLGRP surpluses are treated as payables from the SLGRP to employers.

Prior to the formation of the SLGRP, the State and Community Colleges were pooled together and some employers participated in the Local Government Rate Pool (LGRP). The UAL attributable to the State and Community Colleges or the LGRP at the time the SLGRP was formed is maintained separately from the SLGRP, and is reduced by contributions and increased for interest charges at the assumed interest rate.

Similarly, when an independent employer joins the SLGRP, a Transition Liability or Surplus is calculated to ensure that each employer enters the pool on a comparable basis. The Transition Liability for each employer is maintained separately from the SLGRP, and is reduced by contributions and increased for interest charges at the assumed interest rate. The Transition Surplus for each employer is also maintained separately from the SLGRP, and is amortized over time through contribution rate offsets and credited with interest at the assumed interest rate. The table below shows the reconciliation of the pre-SLGRP pooled liability attributable to the State and Community Colleges and the LGRP from the last valuation to the current valuation. It also shows the reconciliation of the total Transition Liability or Surplus from the last valuation to the current valuation.

	State and Community Colleges	Local Government Rate Pool	Transition	Total
Pre-SLGRP liability/(surplus), January 1, 2017	**$514.0**	**($218.6)**	**($682.3)**	**($386.8)**
Employer contributions	(64.0)	26.4	80.9	43.3
Supplemental payments	0.0	0.0	(0.1)	(0.1)
Interest	32.4	(13.8)	(43.3)	(24.7)
Employer mergers/adjustments	0.0	0.0	(1.1)	(1.1)
Pre-SLGRP liability/(surplus), December 31, 2017	**$482.4**	**($206.0)**	**($645.9)**	**($369.5)**
Employers joining the SLGRP			32.9	32.9
Pre-SLGRP liability/(surplus), January 1, 2018	**$482.4**	**($206.0)**	**($613.0)**	**($336.6)**

Amounts in millions

Tier 1/Tier 2 Pension Liabilities

Normal Cost

The normal cost represents the present value of benefits allocated to the next year of service by the actuarial cost method. If all current actuarial assumptions are met in both past and future years, the normal cost represents the percent of payroll that would need to be contributed each year to fully fund plan benefits during each member's working career.

A summary of the normal cost by assumed cause of future termination of service is shown below on a system-wide basis for the Tier 1/Tier 2 pension benefits.

	December 31, 2017	December 31, 2016	Percent Change
Normal Cost			
Service Retirement	$434.1	$464.5	(6.6%)
Withdrawal	156.5	173.3	(9.7%)
Duty Disability	2.7	3.1	(11.9%)
Nonduty Disability	13.3	14.2	(6.5%)
Death	4.6	4.9	(5.6%)
Administrative Expenses	37.5	37.5	0.0%
Total Normal Cost	**$648.7**	**$697.4**	**(7.0%)**

Amounts in millions

Reconciliation of Change in Normal Cost

The decrease in normal cost since the prior valuation is primarily due to the reduction in active Tier 1/Tier 2 members as members retire from the closed Tier 1/Tier 2 group.

The table below reconciles the normal cost from the prior valuation to the current valuation.

	Tier 1/Tier 2 Pension
Normal Cost, December 31, 2016	**$697.4**
Expected increase (decrease)	(41.0)
Assumption and method changes	0.0
Plan changes	0.0
Deviations from expected experience	
Pay increases	$1.9
Interest crediting experience	3.8
All other sources	(13.4)
Total demographic (gains) and losses	**($7.7)**
Normal Cost, December 31, 2017	**$648.7**

Amounts in millions

Summary of Normal Cost by Group and Tier

A summary of the normal cost by tier and employment category for each rate pool is shown below. Again, independent employers, including State Judiciary, are treated as if they were a single rate pool for purposes of the system-wide report.

	December 31, 2017				December 31, 2016	
	SLGRP	School Districts	Independent Employers	Tier 1/ Tier 2 Totals	Tier 1/ Tier 2 Totals	Percent Change
Normal Cost[1]						
Tier 1 General Service	$145.2	$89.4	$20.2	$254.9	$295.2	(13.7%)
Tier 2 General Service	138.5	109.0	17.5	265.0	268.3	(1.2%)
Tier 1 Police & Fire	36.9	0.3	12.2	49.5	56.4	(12.3%)
Tier 2 Police & Fire	60.9	0.3	18.2	79.3	77.5	2.3%
Total Normal Cost	**$381.5**	**$199.0**	**$68.1**	**$648.7**	**$697.4**	**(7.0%)**

Amounts in millions

[1] *Includes assumed administrative expenses. Assumed expenses allocated pro-rata based on normal cost.*

Actuarial Accrued Liability

The actuarial accrued liability represents the present value of benefits allocated to prior years of service by the actuarial cost method. A summary of the actuarial accrued liability is shown below on a system-wide basis for the Tier 1/Tier 2 pension benefits.

	December 31, 2017	December 31, 2016	Percent Change
Active Members	$18,914.1	$19,564.2	(3.3%)
Inactive Members	4,539.9	5,033.5	(9.8%)
Retired Members and Beneficiaries	54,967.4	51,655.5	6.4%
Total Actuarial Accrued Liability	**$78,421.4**	**$76,253.3**	**2.8%**

Amounts in millions

Actuarial Accrued Liability

A summary of actuarial accrued liabilities based on member status, tier and employment category is shown in the table below. For this exhibit, all independent employers, including State Judiciary, have been grouped together.

	December 31, 2017				December 31, 2016	
	SLGRP	School Districts	Independent Employers	Tier 1 / Tier 2 Totals[1]	Tier 1 / Tier 2 Totals[1]	Percent Change
Active Members						
Tier 1 General Service	$5,080.3	$3,456.7	$609.2	$9,146.2	$10,173.1	(10.1%)
Tier 1 Police & Fire	1,162.4	4.8	409.9	1,577.1	1,729.4	(8.8%)
Tier 1 Total	**6,242.7**	**3,461.5**	**1,019.0**	**10,723.3**	**11,902.5**	**(9.9%)**
Tier 2 General Service	3,362.6	2,666.0	465.8	6,494.3	6,124.1	6.0%
Tier 2 Police & Fire	1,304.5	5.3	386.6	1,696.5	1,537.6	10.3%
Tier 2 Total	**4,667.1**	**2,671.3**	**852.4**	**8,190.8**	**7,661.7**	**6.9%**
Total Active Members	**$10,909.8**	**$6,132.8**	**$1,871.5**	**$18,914.1**	**$19,564.2**	**(3.3%)**
Inactive Members	**2,831.4**	**1,395.7**	**312.8**	**4,539.9**	**5,033.5**	**(9.8%)**
Retired Members and Beneficiaries	**28,032.9**	**22,148.9**	**4,728.6**	**54,967.4**	**51,655.5**	**6.4%**
Total Tier 1/ Tier 2 Pension Liability, December 31,	**$41,774.2**	**$29,677.4**	**$6,912.8**	**$78,421.4**	**$76,253.3**	**2.8%**
Employers joining the SLGRP	376.6		(376.6)	0.0	0.0	
Total Tier 1/ Tier 2 Pension Liability, January 1,	**$42,150.7**	**$29,677.4**	**$6,536.3**	**$78,421.4**	**$76,253.3**	**2.8%**

Amounts in millions

[1] *Includes Multnomah Fire District #10.*

Reconciliation of Change in Actuarial Accrued Liability

The change in actuarial accrued liability since the last valuation reflects the experience of the system. The actuarial accrued liability is expected to increase due to benefits earned during the year and interest, and to decrease due to benefits paid during the year.

The table below reconciles the actuarial accrued liability from the last valuation to this valuation.

	Tier 1/Tier 2 Pension
Actuarial Accrued Liability December 31, 2016	**$76,253.3**
Expected change	1,527.3
Assumption and method changes	0.0
Plan changes	0.0
Deviations from expected experience	
Retirements from active status	$146.8
Disability retirements	(1.8)
Active mortality and withdrawal	12.5
Pay increases	70.7
Interest crediting experience	95.7
Inactive mortality	18.6
Data corrections	273.0
Other	24.1
Total demographic (gains) and losses	**$639.8**
New Entrants	1.2
Actuarial Accrued Liability December 31, 2017	**$78,421.4**

Amounts in millions

Tier 1/Tier 2 Pension Unfunded Accrued Liability (UAL)

Calculation of UAL

The Unfunded Accrued Liability (UAL) represents the difference between the actuarial accrued liability and the valuation assets. To determine uncollared and collared base employer contribution rates, the UAL is calculated excluding side accounts. The calculated collared base contribution rate is later offset by an amortized portion of the side accounts for individual employers with such accounts. A summary of the UAL by rate pool is shown on the following table. All independent employers, including State Judiciary, have been grouped together.

	SLGRP	School Districts	Independent Employers	Tier 1 / Tier 2 Totals[1]
December 31, 2017				
1. Actuarial accrued liability	$42,150.7	$29,677.4	$6,536.3	$78,421.4
2. Actuarial value of assets	$30,899.7	$21,924.7	$4,932.9	$57,648.4
3. Unfunded accrued liability *(2. - 1.)*	$11,251.0	$7,752.7	$1,603.4	$20,773.0
4. Funded percentage *(2. ÷ 1.)*	73.3%	73.9%	75.5%	73.5%
5. Combined valuation payroll	$5,897.8	$3,314.2	$886.9	$10,098.9
6. Unfunded accrued liability as % of combined valuation payroll *(3. ÷ 5.)*	190.8%	233.9%	180.8%	205.7%
December 31, 2016				
1. Actuarial accrued liability	$40,351.3	$29,152.2	$6,690.8	$76,253.3
2. Actuarial value of assets	$28,032.6	$19,952.9	$4,770.0	$52,648.8
3. Unfunded accrued liability *(2. - 1.)*	$12,318.7	$9,199.2	$1,920.9	$23,604.4
4. Funded percentage *(2. ÷ 1.)*	69.5%	68.4%	71.3%	69.0%
5. Combined valuation payroll	$5,714.0	$3,240.7	$917.8	$9,872.6
6. Unfunded accrued liability as % of combined valuation payroll *(3. ÷ 5.)*	215.6%	283.9%	209.3%	239.1%

Amounts in millions

[1] *Includes Multnomah Fire District #10.*

Reconciliation of UAL Bases

Beginning with the December 31, 2007 actuarial valuation, each odd-year valuation has established a 20-year closed-period amortization schedule for outstanding regular Tier 1/Tier 2 UAL amounts. As part of the 2012 review of actuarial methods and assumptions, the PERS Board decided to reset the Tier 1/Tier 2 amortization period to 20 years effective with the December 31, 2013 valuation. This means the entire unamortized Tier 1/Tier 2 UAL for each rate pool and independent employer was re-amortized over a 20 year period as a level percentage of projected future payroll. For the December 31, 2015 and 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.

The UAL amortization schedules are shown for the SLGRP and School District rate pools below. UAL bases for independent employers are developed individually for each employer, and are shown in each employer's individual valuation report.

SLGRP					
Amortization Base	UAL December 31, 2016	Payment	Interest	UAL December 31, 2017	Next Year's Payment
December 31, 2013	$3,857.8	$305.7	$266.0	$3,818.0	$316.4
December 31, 2015	6,831.9	499.9	472.7	6,804.7	517.4
December 31, 2017	N/A	N/A	N/A	628.2	44.4
Total				**$11,251.0**	**$878.2**

Amounts in millions

School Districts					
Amortization Base	UAL December 31, 2016	Payment	Interest	UAL December 31, 2017	Next Year's Payment
December 31, 2013	$3,402.1	$269.6	$234.6	$3,367.0	$279.1
December 31, 2015	4,560.1	333.7	315.5	4,542.0	345.4
December 31, 2017	N/A	N/A	N/A	(156.3)	(11.0)
Total				**$7,752.7**	**$613.4**

Amounts in millions

Actuarial Gain or Loss since Prior Valuation

In every actuarial valuation, assumptions are made as to the future experience of the plan and covered group of participants. Whenever there is a difference between the actual experience and that anticipated by the actuarial assumptions, there is an actuarial gain or loss to the plan. Gains are the result of experience that is more financially favorable to the system than assumed (i.e., serves to reduce the unfunded accrued liability or increase the surplus), while losses are the result of financially unfavorable experience to the system.

The table below shows the development of the actuarial gain (or loss) for the Tier 1/Tier 2 pension benefits for the year ending December 31, 2017. For this exhibit, all independent employers, including State Judiciary, have been grouped together.

	SLGRP	School District	Independent Employers	Tier 1/Tier 2 Totals[1]
1. Expected actuarial accrued liability				
a. Actuarial accrued liability at January 1, 2017	$40,351.3	$29,152.2	$6,690.8	$76,253.3
b. Normal cost (excluding expenses) at January 1, 2017	384.6	203.6	71.7	659.9
c. Benefit payments (excluding expenses) for fiscal year ending December 31, 2017	(2,287.6)	(1,807.4)	(385.5)	(4,485.2)
d. Interest	2,836.8	2,041.2	470.4	5,352.5
e. Expected actuarial accrued liability before changes *(a. + b. + c. + d.)*	$41,285.2	$29,589.5	$6,847.5	$77,780.5
f. Change in actuarial accrued liability at December 31, 2017, due to assumption, method, and plan changes	0.0	0.0	0.0	0.0
g. Expected actuarial accrued liability at December 31, 2017 *(e. + f.)*	$41,285.2	$29,589.5	$6,847.5	$77,780.5
2. Actuarial accrued liability at December 31, 2017	$41,774.2	$29,677.4	$6,912.8	$78,421.4
3. Liability gain/(loss) ***(1.g. - 2)***	**($489.0)**	**($87.9)**	**($65.4)**	**($640.9)**
4. Expected actuarial value of assets				
a. Actuarial value of assets at January 1, 2017	$28,032.6	$19,952.9	$4,770.0	$52,648.8
b. Actual contributions for 2017	699.2	519.0	97.0	1,315.2
c. Benefit payments and expenses for fiscal year ending December 31, 2017	(2,305.4)	(1,821.5)	(388.9)	(4,520.4)
d. Assumed investment return	1,961.1	1,389.7	332.3	3,675.3
e. Expected actuarial value of assets before changes *(a. + b. + c. + d.)*	$28,387.6	$20,040.2	$4,810.4	$53,118.9
f. Change in actuarial value of assets at December 31, 2017, due to assumption changes	0.0	0.0	0.0	0.0
g. Expected actuarial value of assets at December 31, 2017 *(e. + f.)*	$28,387.6	$20,040.2	$4,810.4	$53,118.9
5. Actuarial value of assets as of December 31, 2017	$30,599.3	$21,924.7	$5,200.5	$57,615.6
6. Asset gain/(loss) ***(5. - 4.g.)***	**$2,211.7**	**$1,884.5**	**$390.1**	**$4,496.6**
7. Net actuarial gain/(loss) ***(3. + 6.)***	**$1,722.7**	**$1,796.6**	**$324.7**	**$3,855.7**

Amounts in millions

[1] Includes Multnomah Fire District #10.

Reconciliation of the UAL

The table below reconciles the UAL from the last valuation to this valuation. For this exhibit, all independent employers, including State Judiciary, have been grouped together.

	SLGRP	School Districts	Independent Employers	Tier 1 / Tier 2 Totals[1]
UAL, December 31, 2016	$12,318.7	$9,199.2	$1,920.9	$23,604.4
Normal cost	384.6	203.6	71.7	659.9
Administrative expenses	17.8	14.0	3.3	35.2
Contributions	(699.2)	(519.0)	(97.0)	(1,315.2)
Liability (gain) or loss	489.0	87.9	65.4	640.9
Asset (gain) or loss	(2,211.7)	(1,884.5)	(390.1)	(4,496.6)
Assumption, method, and plan changes	0.0	0.0	0.0	0.0
Interest at 7.20%	875.7	651.5	138.1	1,677.2
UAL, December 31, 2017	**$11,174.9**	**$7,752.7**	**$1,712.4**	**$20,805.9**
Employers joining SLGRP	76.1		(109.0)	(32.9)
UAL, January 1, 2018	**$11,251.0**	**$7,752.7**	**$1,603.4**	**$20,773.0**

Amounts in millions

[1] *Includes Multnomah Fire District #10.*

Tier 1/Tier 2 Pension Contribution Rate Development

Normal Cost Rates

The table below shows the development of the system-wide weighted average Tier 1/ Tier 2 normal cost rate.

	December 31, 2017	December 31, 2016	Percent Change
Normal Cost			
a. Service Retirement	$434.1	$464.5	(6.6%)
b. Withdrawal	156.5	173.3	(9.7%)
c. Duty Disability	2.7	3.1	(11.9%)
d. Nonduty Disability	13.3	14.2	(6.5%)
e. Death	4.6	4.9	(5.6%)
f. Administrative Expenses	37.5	37.5	0.0%
g. Total Normal Cost	**$648.7**	**$697.4**	**(7.0%)**
Tier 1/Tier 2 Valuation Payroll	**$4,246.9**	**$4,516.7**	**(6.0%)**
Average Normal Cost Rate			
a. Service Retirement	10.22%	10.28%	
b. Withdrawal	3.69%	3.84%	
c. Duty Disability	0.06%	0.07%	
d. Nonduty Disability	0.31%	0.31%	
e. Death	0.11%	0.11%	
f. Administrative Expenses	0.88%	0.83%	
g. Average Normal Cost Rate	**15.27%**	**15.44%**	

Amounts in millions

The table below shows the development of the Tier 1/Tier 2 normal cost rate for the various rate pools. For this exhibit, all independent employers, including State Judiciary, have been grouped together.

	SLGRP	School Districts	Independent Employers	Tier 1 / Tier 2 Totals
Normal Cost				
Tier 1 General Service	$145.2	$89.4	$20.2	$254.9
Tier 2 General Service	138.5	109.0	17.5	265.0
Tier 1 Police & Fire	36.9	0.3	12.2	49.5
Tier 2 Police & Fire	60.9	0.3	18.2	79.3
Total Normal Cost	**$381.5**	**$199.0**	**$68.1**	**$648.7**
Tier 1/Tier 2 Valuation Payroll				
Tier 1 General Service	$845.4	$569.1	$108.1	$1,522.7
Tier 2 General Service	1,095.5	871.9	137.2	2,104.7
Tier 1 Police & Fire	165.8	1.3	54.2	221.4
Tier 2 Police & Fire	303.8	1.3	93.0	398.1
Total Valuation Payroll	**$2,410.6**	**$1,443.7**	**$392.6**	**$4,246.9**
Average Normal Cost Rates				
Tier 1 General Service	17.17%	15.72%	18.72%	16.74%
Tier 2 General Service	12.64%	12.50%	12.72%	12.59%
Tier 1 Police & Fire	22.26%	21.17%	22.60%	22.34%
Tier 2 Police & Fire	20.05%	20.94%	19.51%	19.93%
Average Rates				
Tier 1 Average	18.01%	15.73%	20.01%	17.45%
Tier 2 Average	14.25%	12.52%	15.47%	13.76%
General Service Average	14.62%	13.77%	15.36%	14.33%
Police & Fire Average	20.83%	21.06%	20.65%	20.79%
System Average	**15.83%**	**13.79%**	**17.35%**	**15.27%**
Member Contributions			0.43%	0.04%
Employer System Average	**15.83%**	**13.79%**	**16.92%**	**15.23%**

Amounts in millions

UAL Rates Prior to Application of the Rate Collar

The Tier 1/Tier 2 UAL rate prior to application of the rate collar is determined by calculating the sum of next year's scheduled amortization payments to the Tier 1/Tier 2 UAL as a percentage of combined (Tier 1/Tier 2 plus OPSRP) valuation payroll.

The following table develops the Tier 1/Tier 2 UAL rate separately for each of the rate pools. For this exhibit, all independent employers, including State Judiciary, have been grouped together.

	SLGRP	School Districts	Independent Employers	Tier 1 / Tier 2 Totals[1]
December 31, 2017				
1. Total UAL	$11,251.0	$7,752.7	$1,603.4	$20,773.0
2. Next year's UAL payment	$878.2	$613.4	$123.6	$1,615.2
3. Combined valuation payroll	$5,897.8	$3,314.2	$886.9	$10,098.9
4. UAL rate *(2 ÷ 3)*	**14.89%**	**18.51%**	**13.94%**	**15.99%**
December 31, 2016				
1. Total UAL	$12,318.7	$9,199.2	$1,920.9	$23,604.4
2. Next year's UAL payment	$920.7	$690.6	$142.2	$1,753.5
3. Combined valuation payroll	$5,714.0	$3,240.7	$917.8	$9,872.6
4. UAL rate *(2 ÷ 3)*	**16.11%**	**21.31%**	**15.49%**	**17.76%**

Amounts in millions

[1] *While the Tier 1/Tier 2 Total UAL amount includes the UAL for Multnomah Fire District #10 (MFD), the UAL rate for MFD is developed separately in this report and is added to the rates shown in this table.*

Pre-SLGRP Pooled Rate

Prior to the formation of the SLGRP, the State and Community Colleges were pooled together and some employers participated in the Local Government Rate Pool (LGRP). The Tier 1/Tier 2 UAL attributable to the State and Community Colleges and the LGRP at the time the SLGRP was formed is maintained separately from the Tier 1/Tier 2 UAL for the SLGRP. The balance of the pre-SLGRP pooled liability attributable to the State and Community Colleges or the LGRP on the valuation date is amortized over the period ending December 31, 2027 and expressed as a percentage of the pool’s combined (Tier 1/Tier 2 plus OPSRP) valuation payroll.

The following table develops the Pre-SLGRP pooled rate separately for the State and Community College Pool and the LGRP.

	December 31, 2017	December 31, 2016
State and Community College Pool		
1. Total pre-SLGRP pooled liability	$482.4	$514.0
2. Combined valuation payroll	$3,388.6	$3,282.6
3. Amortization Factor	8.312	8.994
4. Pre-SLGRP pooled rate *(1. ÷ 2. ÷ 3.)*	**1.71%**	**1.74%**
Local Government Rate Pool		
1. Total pre-SLGRP pooled liability	($206.0)	($218.6)
2. Combined valuation payroll	$1,475.6	$1,444.6
3. Amortization Factor	8.312	8.994
4. Pre-SLGRP pooled rate *(1. ÷ 2. ÷3.)*	**(1.68%)**	**(1.68%)**

Amounts in millions

Transition Liability or Surplus Rate

When an employer joins the SLGRP, a Transition Liability or Surplus is calculated to ensure that each employer enters the pool on a comparable basis. The Transition Liability or Surplus for each employer is maintained separately from the Tier 1/Tier 2 UAL for the SLGRP. The Transition Liability is amortized over a fixed period, and is expressed as a percentage of the employer's combined (Tier 1/Tier 2 plus OPSRP) valuation payroll. The Transition Surplus for each employer is also maintained separately from the SLGRP, and is amortized over a fixed period via contribution rate offsets as a percentage of the employer's combined valuation payroll. For employers joining the SLGRP prior to December 31, 2009, the fixed period ends December 31, 2027. For all others, the fixed period ends 18 years after the date the employer joined the SLGRP.

The following table develops the average rate impact across all employers with outstanding Transition Liabilities or Surpluses as of the valuation date. The amortization factor below reflects the weighted average of the amortization periods for all such employers.

	December 31, 2017	December 31, 2016
1. Total transition liability/(surplus)	($613.0)	($682.3)
2. Combined valuation payroll	$2,365.0	$2,264.0
3. Average Amortization Factor[1]	8.587	9.042
4. Average transition liability/(surplus) rate *(1. ÷ 2. ÷ 3.)*	**(3.02%)**	**(3.33%)**

Amounts in millions

[1] *Weighted average*

Multnomah Fire District #10 UAL Rate

The Multnomah Fire District #10 UAL rate is determined by amortizing Multnomah Fire District #10's unfunded accrued liability over the period ending December 31, 2027, and expressing the result as a percentage of combined valuation payroll.

As part of 2003 legislation, the Multnomah Fire District #10 UAL was allocated to all Tier 1/Tier 2 employers. Multnomah Fire District #10 was allocated $50,000 of the outstanding UAL, which was fully paid in November, 2003. Of the remaining UAL, City of Portland is allocated 21.8743%, while all Tier 1/Tier 2 employers, including City of Portland, share in the remaining 78.1257%. Four employers (City of Gresham, City of Fairview, City of Wood Village, and City of Troutdale) are required to pay twice the rate that is determined under item 6.b. below. Thus, the combined valuation payroll for all Tier 1/Tier 2 employers, shown below in item 4.b., includes twice the valuation payroll for those four employers.

	December 31, 2017	December 31, 2016
1. Actuarial accrued liability		
a. Active members	$0.0	$0.0
b. Inactive members	0.0	0.0
c. Retired members and beneficiaries	57.0	58.9
d. Total actuarial accrued liability	$57.0	$58.9
2. Actuarial value of assets		
a. Employer reserve	($134.1)	($131.7)
b. Members reserve	0.0	0.0
c. Benefits in force reserve	25.2	25.0
d. Total actuarial value of aseets	($108.9)	($106.7)
3. Multnomah FD #10 UAL *(1.d. - 2.d.)*	$165.9	$165.7
a. Portion allocated to City of Portland *(21.8743% x 3.)*	$36.3	$36.2
b. Portion allocated to all T1/T2 employers *(78.1257% x 3.)*	$129.6	$129.4
4. Combined valuation payroll		
a. City of Portland	$384.4	$362.9
b. All employers[1]	$10,152.6	$9,925.0
5. Amortization factor	8.312	8.994
6. Multnomah FD #10 UAL Rate		
a. City of Portland *(3.a. ÷ 4.a. ÷ 5.)*	1.14%	1.11%
b. All Tier 1 / Tier 2 employers *(3.b. ÷ 4.b. ÷ 5.)*	0.15%	0.14%
7. Total Multnomah FD #10 UAL Rate		
a. City of Portland *(6.a. + 6.b.)*	1.29%	1.25%
b. City of Gresham, City of Fairview, City of Wood Village, City of Troutdale *(2 x 6.b.)*	0.30%	0.28%
c. All other Tier 1 / Tier 2 employers *(6.b.)*	0.15%	0.14%

Amounts in millions

[1] *For weighting purposes, includes double valuation payroll for each of the four employers listed in 7.b.*

Calculated Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the development of the total Tier 1/Tier 2 contribution rate for each rate pool as of the valuation date. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates are applied to combined (Tier 1/Tier 2 plus OPSRP) valuation payroll. These rates are adjusted on an individual employer basis for side accounts and pre-SLGRP liabilities, if applicable. Weighted average adjustments for side accounts and pre-SLGRP liabilities are shown in the table. For individual employers, these adjustments cannot reduce the pension contribution rate below 0.00%. Note that independent employers, other than the State Judiciary, are subject to a minimum employer contribution rate of 6.00% that is not taken into account in the average rates below.

July 1, 2019 Rates Calculated as of December 31, 2017	SLGRP	School Districts	Independent Employers	Tier 1 / Tier 2 Totals
Tier 1/Tier 2 pension contribution rates				
Employer normal cost rate	15.83%	13.79%	16.92%	15.23%
Member normal cost rate			0.43%	0.04%
Uncollared UAL rate	14.89%	18.51%	13.94%	15.99%
Multnomah FD #10 rate	0.22%	0.15%	0.16%	0.19%
Total Tier 1/Tier 2 pension rate	**30.94%**	**32.45%**	**31.45%**	**31.45%**
Average adjustments				
Pre-SLGRP liability/(surplus) rate	(0.69%)	N/A	N/A	(0.40%)
Side account rate	(4.99%)	(10.66%)	(1.13%)	(6.51%)
Total average adjustment	**(5.68%)**	**(10.66%)**	**(1.13%)**	**(6.91%)**
Uncollared net pension contribution rate	**25.26%**	**21.79%**	**30.32%**	**24.54%**

Calculation of Rate Collar

Due to the rate collar, employer base contribution rates will not generally change by more than the greater of 3 percent of payroll or 20% of the current contribution rate. However, if the funded percentage is below 60% or above 140%, the size of the rate collar is doubled. If the funded percentage is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale. All rate collar calculations are performed excluding amounts and contribution rates attributable to pre-SLGRP liabilities, side accounts and member IAP contributions. Retiree medical rates are also excluded from the rate collar calculation.

The table below develops the impact of the collar for each of the Tier 1/Tier 2 rate pools. Although the calculation is performed individually for independent employers, the table shows the calculation as if independent employers were a single rate pool. Note that independent employers, other than the State Judiciary, are subject to a minimum employer contribution rate of 6.00% that is not taken into account in the calculation below.

July 1, 2019 Rates Calculated as of December 31, 2017				
Calculation of Collar Adjustments	**SLGRP**	**School Districts**	**Independent Employers**	**Tier 1 / Tier 2 Totals[1]**
1. Current employer contribution rate	21.88%	25.43%	19.96%	22.88%
2. Size of rate collar				
a. Preliminary size of rate collar (*greater of 3% or 20% x 1.)*	4.38%	5.09%	3.99%	4.58%
b. Funded percentage	73%	74%	75%	74%
c. Size of rate collar *(If b. < 60% or b. > 140%, 2 x a. If b. is 70%-130%, a. Otherwise, graded rate between a. and 2 x a.)*	**4.38%**	**5.09%**	**3.99%**	
3. July 1, 2019 Minimum employer contribution rate *(1. - 2.c.)*	17.50%	20.34%	15.97%	
4. July 1, 2019 Maximum employer contribution rate *(1. + 2.c.)*	26.26%	30.52%	23.95%	
5. July 1, 2019 employer contribution rate before collar	30.94%	32.45%	31.02%	
6. July 1, 2019 employer contribution rate after collar *(5., but not less than 3. or more than 4.)*	26.26%	30.52%	23.95%	
7. Impact of collar *(6. - 5.)*[2]	**(4.68%)**	**(1.93%)**	**(7.07%)**	**(3.99%)**

[1] *The average Tier 1/Tier 2 rate has been recalculated based on current valuation payroll.*

[2] *The impact of collar shown for the system-wide column is the weighted average of the impact shown for each rate pool.*

Calculated Employer Contribution Rate Summary (Post-Rate Collar)

Any needed adjustment to reflect the effects of the rate collar is made to the UAL rate. The table below summarizes the average rates effective July 1, 2019 by pool and component. Although the rate collar is applied individually for independent employers, the table shows the average rates as if independent employers were a single rate pool. Note that independent employers, other than the State Judiciary, are subject to a minimum employer contribution rate of 6.00% that is not taken into account in the average rates below.

July 1, 2019 Rates Calculated as of December 31, 2017				
	SLGRP	School Districts	Independent Employers	Tier 1 / Tier 2 Totals
Tier 1/Tier 2 pension contribution rates				
Employer normal cost rate	15.83%	13.79%	16.92%	15.23%
Member normal cost rate			0.43%	0.04%
Collared UAL rate	10.21%	16.58%	6.87%	12.00%
Multnomah FD #10 rate	0.22%	0.15%	0.16%	0.19%
Total Tier 1/Tier 2 pension rate	**26.26%**	**30.52%**	**24.38%**	**27.46%**
Average adjustments				
Pre-SLGRP liability/(surplus) rate	(0.69%)	N/A	N/A	(0.40%)
Side account rate	(4.99%)	(10.66%)	(1.13%)	(6.51%)
Total average adjustment	**(5.68%)**	**(10.66%)**	**(1.13%)**	**(6.91%)**
Collared net pension contribution rate	**20.58%**	**19.86%**	**23.25%**	**20.55%**

OPSRP Assets

Information on OPSRP assets is shown in the section of this report covering the system-wide assets. As of December 31, 2017, the actuarial value of assets for OPSRP is $4,116.5 million.

OPSRP Liabilities

Normal Cost

The normal cost represents the present value of projected future benefits allocated to the next year of service by the actuarial cost method. If all current actuarial assumptions are met in past and future years, the normal cost represents the percent of payroll that would need to be contributed each year to fully fund each member's plan benefits during his or her working career.

A summary of the normal cost by assumed cause of future termination of service is shown below for the current and prior year.

	December 31, 2017			December 31, 2016		
	General Service	Police & Fire	Total	General Service	Police & Fire	Total
Pre-Retirement Disability						
Duty	$0.6	$1.0	$1.6	$0.6	$0.9	$1.5
Non-Duty	8.1	0.9	9.0	7.3	0.9	8.2
Total Pre-Retirement Disability	**$8.7**	**$1.9**	**$10.6**	**$7.9**	**$1.8**	**$9.7**
Other Benefits						
Service Retirement	$369.5	$77.7	$447.2	$341.8	$72.3	$414.1
Withdrawal	41.6	4.0	45.6	38.1	3.7	41.9
Death	4.3	0.7	5.0	3.9	0.6	4.6
Duty Disability Retirement	0.3	0.7	1.1	0.3	0.6	0.9
Non-Duty Disability Retirement	5.6	0.8	6.4	5.1	0.8	5.8
Total Other Benefits	**$421.2**	**$83.9**	**$505.1**	**$389.3**	**$78.0**	**$467.3**
Assumed Administrative Expenses	5.8	0.7	6.5	5.8	0.7	6.5
Total Normal Cost	**$435.7**	**$86.6**	**$522.2**	**$402.9**	**$80.6**	**$483.5**

Amounts in millions

Reconciliation of Change in Normal Cost

The increase in the normal cost since the prior valuation is primarily attributable to the effect of new entrants to the OPSRP program. The table below reconciles the normal cost from the prior valuation to the current valuation.

	OPSRP
Normal Cost, December 31, 2016	**$483.5**
Expected increase (decrease)	(11.5)
Assumption and method changes	0.0
Plan changes	0.0
New entrants	41.3
Deviations from expected experience	
Pay increases	$12.9
All other sources	(4.0)
Total demographic (gains) and losses	**$8.9**
Normal Cost, December 31, 2017	**$522.2**

Amounts in millions

Actuarial Accrued Liability

The actuarial accrued liability represents the present value of projected future benefits allocated to prior years of service by the actuarial cost method. For active members, a summary of the actuarial accrued liability by assumed cause of future termination of service is shown below for the current and prior year.

	December 31, 2017			December 31, 2016		
	General Service	Police & Fire	Total	General Service	Police & Fire	Total
Active Members						
Pre-retirement Duty Disability	$1.3	$2.2	$3.5	$1.0	$1.9	$2.9
Pre-retirement Non-Duty Disability	74.7	7.3	82.0	64.8	6.6	71.3
Service Retirement	3,818.7	695.9	4,514.6	3,220.2	610.2	3,830.4
Withdrawal	207.8	17.4	225.3	182.5	16.0	198.5
Death	40.3	5.8	46.2	34.1	5.0	39.1
Duty Disability Retirement	2.2	4.1	6.3	2.2	4.1	6.2
Non-Duty Disability Retirement	54.9	6.7	61.6	47.0	6.0	53.0
Total Active Members	**$4,199.8**	**$739.5**	**$4,939.3**	**$3,551.7**	**$649.7**	**$4,201.4**
Inactive Members			385.2			314.5
Retired Members and Beneficiaries			310.1			201.1
Total Actuarial Accrued Liability			**$5,634.7**			**$4,717.0**

Amounts in millions

Reconciliation of Change in Actuarial Accrued Liability

The change in actuarial accrued liability since the last valuation reflects the experience of the system. The actuarial accrued liability is expected to increase due to benefits earned during the year and interest, and to decrease due to benefits paid during the year. The table below reconciles the actuarial accrued liability from the last valuation to this valuation.

	OPSRP
Actuarial Accrued Liability December 31, 2016	**$4,717.0**
Expected change	808.3
Assumption and method changes	0.0
Plan changes	0.0
Deviations from expected experience	
Retirements from active status	$0.7
Disability retirements	(1.8)
Active mortality and withdrawal	(10.2)
Pay increases	97.7
Inactive mortality	(2.0)
Data corrections	(27.9)
Other	(14.2)
Total demographic (gains) and losses	**$42.3**
New entrants	67.1
Actuarial Accrued Liability December 31, 2017	**$5,634.7**

Amounts in millions

OPSRP Unfunded Accrued Liability (UAL)

Calculation of UAL

The Unfunded Accrued Liability (UAL) represents the difference between the actuarial accrued liability and the valuation assets. The UAL is amortized over combined (Tier 1/Tier 2 and OPSRP) valuation payroll. The table below shows the OPSRP UAL, funded status, and UAL as a percentage of combined valuation payroll.

	December 31, 2017	December 31, 2016
1. Actuarial accrued liability	$5,634.7	$4,717.0
2. Actuarial value of assets	$4,116.5	$3,021.4
3. Unfunded accrued liability *(2. - 1.)*	$1,518.2	$1,695.6
4. Funded percentage *(2. ÷ 1.)*	73.1%	64.1%
5. Combined valuation payroll	$10,098.9	$9,872.6
6. Unfunded accrued liability as % of combined valuation payroll *(3. ÷ 5.)*	15.0%	17.2%

Amounts in millions

Reconciliation of UAL Bases

Beginning with the December 31, 2007, actuarial valuation, each odd-year valuation establishes a 16-year closed-period amortization base for outstanding OPSRP UAL amounts. For odd-year valuations subsequent to December 31, 2007, this amortization base is calculated based on the total OPSRP UAL as of that valuation date less the remaining unamortized balance of any OPSRP UAL bases established at previous odd-year valuation dates. In other words, OPSRP experience from December 31, 2015 to December 31, 2017 is amortized based on a 16-year amortization schedule beginning December 31, 2017.

Reconciliation of UAL Bases					
Amortization Base	UAL December 31, 2016	Payment	Interest	UAL December 31, 2017	Next Year's Payment
December 31, 2007	($51.4)	($8.4)	($3.4)	($46.4)	($8.7)
December 31, 2009	131.7	17.3	8.8	123.2	17.9
December 31, 2011	50.8	5.6	3.4	48.6	5.8
December 31, 2013	447.7	43.5	30.6	434.7	45.0
December 31, 2015	750.2	65.3	51.5	736.4	67.5
December 31, 2017	N/A	N/A	N/A	221.7	18.4
Total				**$1,518.2**	**$146.0**

Amounts in millions

Actuarial Gain or Loss since Prior Valuation

In every actuarial valuation, assumptions are made as to the future experience of the plan and covered group of participants. Whenever there is a difference between the actual experience and that anticipated by the actuarial assumptions, there is an actuarial gain or loss to the plan. Gains are the result of experience that is more financially favorable to the system than anticipated (i.e., serves to reduce the unfunded accrued liability or increase the surplus), while losses are the result of experience that is financially unfavorable to the system.

The table below develops the actuarial gain or loss for OPSRP for the year ending December 31, 2017.

	OPSRP
1. Expected actuarial accrued liability	
a. Actuarial accrued liability at January 1, 2017	$4,717.0
b. Normal cost (excluding expenses) at January 1, 2017	477.0
c. Benefit payments (excluding expenses) for year ending December 31, 2017	(24.6)
d. Interest	355.9
e. Expected actuarial accrued liability before changes *(a. + b. + c. + d.)*	$5,525.3
f. Change in actuarial accrued liability at December 31, 2017, due to assumption and method changes	0.0
g. Change in actuarial accrued liability at December 31, 2017, due to plan changes	0.0
h. Expected actuarial accrued liability at December 31, 2017 *(e. + f. + g.)*	$5,525.3
2. Actuarial accrued liability at December 31, 2017	$5,634.7
3. Liability gain/(loss) ***(1.h. - 2)***	**($109.4)**
4. Expected actuarial value of assets	
a. Actuarial value of assets at January 1, 2017	$3,021.4
b. Actual contributions for 2017	571.1
c. Benefit payments and expenses for fiscal year ending December 31, 2017	(30.5)
d. Assumed investment return	237.0
e. Expected actuarial value of assets at December 31, 2017 *(a. + b. + c. + d.)*	$3,798.9
5. Actuarial value of assets as of December 31, 2017	$4,116.5
6. Asset gain/(loss) ***(5. - 4.e.)***	**$317.6**
7. Net actuarial gain/(loss) ***(3. + 6.)***	**$208.2**

Amounts in millions

Reconciliation of the UAL

The table below summarizes the changes in UAL since the prior valuation.

The 2017 liability loss is primarily due to pay increases differing from assumption and due to new entrants to the OPSRP program.

	OPSRP
UAL, December 31, 2016	**$1,695.6**
Normal cost (including actual administrative expenses)	482.9
Contributions	(571.1)
Liability (gain) or loss	109.4
Asset (gain) or loss	(317.6)
Assumption and method changes	0.0
Plan changes	0.0
Interest at 7.20%	118.9
UAL, December 31, 2017	**$1,518.2**

Amounts in millions

OPSRP Contribution Rate Development

Normal Cost Rates

The table below shows the development of the OPSRP normal cost rates.

	December 31, 2017			December 31, 2016		
	General Service	Police & Fire	Total	General Service	Police & Fire	Total
Normal Cost						
Pre-retirement Disability Benefits	$8.7	$1.9	$10.6	$7.9	$1.8	$9.7
All Other Benefits	421.2	83.9	505.1	389.3	78.0	467.3
Assumed Administrative Expenses	5.8	0.7	6.5	5.8	0.7	6.5
Total Normal Cost	**$435.7**	**$86.6**	**$522.2**	**$402.9**	**$80.6**	**$483.5**
OPSRP Valuation Payroll	**$5,187.5**	**$664.5**	**$5,852.0**	**$4,746.4**	**$609.4**	**$5,355.8**
Normal Cost Rate						
Pre-retirement Disability Benefits	0.17%	0.29%	0.18%	0.17%	0.29%	0.18%
All Other Benefits	8.12%	12.63%	8.63%	8.20%	12.80%	8.72%
Assumed Administrative Expenses	0.11%	0.11%	0.11%	0.12%	0.12%	0.12%
Total Normal Cost Rate	**8.40%**	**13.03%**	**8.92%**	**8.49%**	**13.22%**	**9.03%**

Amounts in millions

UAL Rates

The UAL rate is determined by calculating the sum of next year's scheduled amortization payments to the UAL as a percentage of combined (Tier 1/Tier 2 and OPSRP) valuation payroll.

	December 31, 2017	December 31, 2016
1. Total UAL	$1,518.2	$1,695.6
2. Next year's UAL payment	$146.0	$153.7
3. Combined valuation payroll	$10,098.9	$9,872.6
4. UAL rate *(2 ÷ 3)*	**1.45%**	**1.56%**

Amounts in millions

Calculated Employer Contribution Rates (Pre-Rate Collar)

The following table summarizes the OPSRP contribution rate for general service and police & fire members as of the valuation date, prior to application of the rate collar.

The normal cost rates apply to OPSRP payroll only, but the UAL rate is applied to combined (Tier 1/Tier 2 and OPSRP) valuation payroll. These rates, after the application of the rate collar, are combined with each employer's Tier 1/Tier 2 rates (other than Tier 1/Tier 2 normal cost rate) to determine each employer's pension contribution rate on OPSRP payroll.

July 1, 2019 Rates Calculated as of December 31, 2017			
	General Service	Police & Fire	Average Rate
OPSRP pension contribution rates			
Employer normal cost rate	8.40%	13.03%	8.92%
Uncollared UAL rate	1.45%	1.45%	1.45%
Uncollared OPSRP pension rate	**9.85%**	**14.48%**	**10.37%**

Calculation of Rate Collar

The rate collar restricts the average OPSRP contribution rate so it generally cannot change by more than the greater of 3 percent of payroll or 20% of the current average OPSRP contribution rate. However, if the funded percentage is below 60% or above 140%, the size of the collar is doubled. If the funded percentage is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale. All collar calculations are performed based on the weighted average OPSRP contribution rate, and any adjustment due to the collar is applied to the OPSRP UAL rate.

The table below shows the calculation of and any adjustment for the rate collar.

July 1, 2019 Rates Calculated as of December 31, 2017			
	General Service	**Police & Fire**	**Average Rate**
1. Current employer contribution rate	9.29%	14.06%	9.83%
2. Size of rate collar			
a. Preliminary size of rate collar (*greater of 3% or 20% x 1.)*			3.00%
b. Funded percentage			73%
c. Size of rate collar ***(If b. < 60% or b. > 140%, 2 x a. If b. is 70%-130%, a. Otherwise, graded rate between a. and 2 x a.)***			**3.00%**
3. July 1, 2019 Minimum employer contribution rate *(1. - 2.c.)*			6.83%
4. July 1, 2019 Maximum employer contribution rate *(1. + 2.c.)*			12.83%
5. July 1, 2019 employer contribution rate before collar	9.85%	14.48%	10.37%
6. July 1, 2019 employer contribution rate after collar *(5., but not less than 3. or more than 4.)*	9.85%	14.48%	10.37%
7. Impact of collar *(6. - 5.)*	**0.00%**	**0.00%**	**0.00%**

Calculated Employer Contribution Rates (Post-Rate Collar)

The table below summarizes the OPSRP contribution rate for general service and police & fire members as of the valuation date, after adjustments for the rate collar.

July 1, 2019 Rates Calculated as of December 31, 2017			
	General Service	**Police & Fire**	**Average Rate**
OPSRP pension contribution rates			
Employer normal cost rate	8.40%	13.03%	8.92%
Collared UAL rate	1.45%	1.45%	1.45%
Collared OPSRP pension rate	**9.85%**	**14.48%**	**10.37%**

Retiree Healthcare Valuation

Retiree Healthcare Assets

Assets

A reconciliation of retiree healthcare assets is shown below. The reconciliation of assets is provided by PERS.

	RHIA	RHIPA	Retiree Healthcare Totals
Additions			
1. Employer contributions	$49.2	$12.6	$61.8
2. Net investment income	72.8	2.9	75.7
3. Other	0.0	0.0	0.0
4. Total additions	**$122.0**	**$15.6**	**$137.5**
Deductions			
4. Healthcare Premium Subsidies	($32.4)	($4.6)	($37.0)
5. Administrative expenses	(1.3)	(0.3)	(1.5)
6. Total deductions	**($33.7)**	**($4.9)**	**($38.6)**
7. Net change	**$88.2**	**$10.7**	**$99.0**
8. Net assets held in trust for benefits			
a. Beginning of year	$465.0	$19.1	$484.1
b. End of year	**$553.3**	**$29.8**	**$583.1**

Amounts in millions

Retiree Healthcare Liabilities

Normal Cost

A summary of the normal cost by assumed cause of future termination of service is shown below for the current and prior year.

	RHIA			RHIPA		
	December 31, 2017	December 31, 2016	Percent Change	December 31, 2017	December 31, 2016	Percent Change
Normal Cost						
Service Retirement	$1.8	$2.2		$1.3	$1.4	
Withdrawal	0.6	0.7		0.0	0.0	
Disability	0.1	0.1		0.1	0.1	
Death	0.0	0.0		0.0	0.0	
Total Normal Cost	**$2.5**	**$3.0**	**(16.4%)**	**$1.4**	**$1.5**	**(3.0%)**

Amounts in millions

The table below reconciles the normal cost from the prior valuation to the current valuation.

	RHIA	RHIPA
Normal Cost December 31, 2016	**$3.0**	**$1.5**
Expected increase (decrease)	(0.2)	(0.1)
Assumption and method changes	0.0	0.0
Plan changes	0.0	0.0
Deviations from expected experience		
Demographic (gains) or losses	(0.3)	0.0
Normal Cost December 31, 2017	**$2.5**	**$1.4**

Amounts in millions

Actuarial Accrued Liability

A summary of the actuarial accrued liability by status is shown below for the current and prior year.

	RHIA			RHIPA		
	December 31, 2017	December 31, 2016	Percent Change	December 31, 2017	December 31, 2016	Percent Change
Actives	$71.7	$78.1	(8.2%)	$54.0	$53.5	0.8%
Inactive Members	22.0	23.9	(8.1%)	0.0	0.0	0.0%
Retired Members and Beneficiaries	343.9	361.7	(4.9%)	15.4	14.4	7.2%
Total Actuarial Accrued Liability	**$437.6**	**$463.7**	**(5.6%)**	**$69.4**	**$67.9**	**2.2%**

Amounts in millions

The change in actuarial accrued liability since the last valuation reflects the experience of the system. The actuarial accrued liability is expected to increase due to benefits earned during the year and interest, and to decrease due to benefits paid during the year. The table below reconciles the actuarial accrued liability from the last valuation to this valuation.

	RHIA	RHIPA	Total
Actuarial Accrued Liability December 31, 2016	**$463.7**	**$67.9**	**$531.6**
Expected change	2.9	1.7	4.6
Assumption and method changes	0.0	0.0	0.0
Plan changes	0.0	0.0	0.0
Deviations from expected experience			
Demographic (gains) or losses	(29.0)	(0.2)	(29.2)
Actuarial Accrued Liability December 31, 2017	**$437.6**	**$69.4**	**$506.9**

Amounts in millions

Retiree Healthcare Unfunded Accrued Liability (UAL)

Calculation of UAL

The Unfunded Accrued Liability (UAL) represents the difference between the actuarial accrued liability and the valuation assets. A summary of the UAL by program is shown on the following table.

	RHIA			RHIPA		
	December 31, 2017	December 31, 2016	Percent Change	December 31, 2017	December 31, 2016	Percent Change
1. Actuarial accrued liability	$437.6	$463.7	(5.6%)	$69.4	$67.9	2.2%
2. Actuarial value of assets	$553.3	$465.0	19.0%	$29.8	$19.1	56.1%
3. Unfunded accrued liability	($115.7)	($1.3)	8,508.2%	$39.5	$48.8	(18.9%)
4. Funded percentage *(2. ÷ 1.)*	126.4%	100.3%	26.1%	43.0%	28.1%	52.7%
5. Combined valuation payroll	$10,098.9	$9,872.6	2.3%	$2,984.5	$2,881.4	3.6%
6. Unfunded accrued liability as % of combined valuation payroll *(3. ÷ 5.)*	(1.1%)	(0.0%)		1.3%	1.7%	

Amounts in millions

Reconciliation of UAL Bases

Beginning with the December 31, 2007 actuarial valuation, each rate-setting valuation establishes a 10-year amortization base for outstanding RHIA and RHIPA UAL amounts. For odd-year valuations subsequent to December 31, 2007, this amortization base is calculated based on the total UAL as of that valuation date less the remaining unamortized balance of any UAL bases established at previous odd-year valuation dates. In other words, RHIA and RHIPA experience from December 31, 2015 to December 31, 2017 is amortized based on a 10-year amortization schedule beginning December 31, 2017.

RHIA					
Amortization Base	UAL December 31, 2016	Payment	Interest	UAL December 31, 2017	Next Year's Payment
December 31, 2007	$43.1	$44.5	$1.4	$0.0	$0.0
December 31, 2009	27.5	9.8	1.6	19.3	10.2
December 31, 2011	(20.4)	(4.5)	(1.3)	(17.2)	(4.7)
December 31, 2013	(37.4)	(6.1)	(2.5)	(33.8)	(6.3)
December 31, 2015	(6.0)	(0.8)	(0.4)	(5.6)	(0.8)
December 31, 2017	N/A	N/A	N/A	(78.5)	(9.4)
Total				**($115.7)**	**($11.1)**

Amounts in millions

RHIPA					
Amortization Base	UAL December 31, 2016	Payment	Interest	UAL December 31, 2017	Next Year's Payment
December 31, 2007	$2.9	$3.0	$0.1	$0.0	$0.0
December 31, 2009	0.9	0.3	0.1	0.7	0.3
December 31, 2011	9.5	2.1	0.6	8.0	2.2
December 31, 2013	25.7	4.2	1.7	23.2	4.4
December 31, 2015	10.5	1.4	0.7	9.9	1.4
December 31, 2017	N/A	N/A	N/A	(2.2)	(0.3)
Total				**$39.5**	**$8.0**

Amounts in millions

Actuarial Gain or Loss since Prior Valuation

In every actuarial valuation, assumptions are made as to the future experience of the plan and covered group of participants. Whenever there is a difference between the actual experience and that anticipated by the actuarial assumptions, there is an actuarial gain or loss to the plan. Gains are the result of experience that is more financially favorable to the system than anticipated (i.e., serves to reduce the unfunded accrued liability or increase the surplus), while losses are the result of experience that is financially unfavorable to the system.

The table below shows the development of the actuarial gain (or loss) for RHIA and RHIPA for the plan year ending December 31, 2017.

	RHIA	RHIPA	Retiree Healthcare Totals
1. Expected actuarial accrued liability			
a. Actuarial accrued liability at January 1, 2017	$463.7	$67.9	$531.6
b. Normal cost at January 1, 2017	3.0	1.5	4.5
c. Benefit payments for fiscal year ending December 31, 2017	(32.4)	(4.6)	(37.0)
d. Interest	32.3	4.8	37.1
e. Expected actuarial accrued liability before changes *(a. + b. + c. + d.)*	$466.6	$69.6	$536.1
f. Change in actuarial accrued liability at December 31, 2017, due to assumption and method changes	0.0	0.0	0.0
g. Change in actuarial accrued liability at December 31, 2017, due to plan changes	0.0	0.0	0.0
h. Expected actuarial accrued liability at December 31, 2017 *(e. + f. + g.)*	$466.6	$69.6	$536.1
2. Actuarial accrued liability at December 31, 2017	$437.6	$69.4	$506.9
3. Liability gain/(loss) *(1.h. - 2.)*	**$29.0**	**$0.2**	**$29.2**
4. Expected actuarial value of assets			
a. Actuarial value of assets at January 1, 2017	$465.0	$19.1	$484.1
b. Actual contributions for 2017	49.2	12.6	61.8
c. Benefit payments and expenses for fiscal year ending December 31, 2017	(33.7)	(4.9)	(38.6)
d. Assumed investment return	34.0	1.7	35.7
e. Expected actuarial value of assets before changes *(a. + b. + c. + d.)*	$514.5	$28.6	$543.1
f. Change in actuarial value of assets at December 31, 2017, due to assumption changes	0.0	0.0	0.0
g. Change in actuarial value of assets at December 31, 2017, due to plan changes	0.0	0.0	0.0
h. Expected actuarial value of assets at December 31, 2017 *(e. + f. + g.)*	$514.5	$28.6	$543.1
5. Actuarial value of assets at December 31, 2017	$553.3	$29.8	$583.1
6. Actuarial asset gain/(loss) *(5. - 4.h.)*	**$38.7**	**$1.3**	**$40.0**
7. Net actuarial gain/(loss) *(3. + 6.)*	**$67.8**	**$1.5**	**$69.2**

Reconciliation of UAL

The table below summarizes the changes in UAL since the prior valuation.

The significant decrease in the RHIA UAL is due to a combination of factors, including employer contributions, positive investment returns, lapsed coverage among eligible members, and lower participant than assumed.

The decrease in the RHIPA UAL is primarily due to employer contributions.

	RHIA	RHIPA
UAL, December 31, 2016	**($1.3)**	**$48.8**
Normal Cost (including actual administrative expenses)	4.3	1.8
Contributions	(49.2)	(12.6)
Liability (gain) or loss	(29.0)	(0.2)
Asset (gain) or loss	(38.7)	(1.3)
Assumption and method changes	0.0	0.0
Interest	(1.7)	3.1
UAL, December 31, 2017	**($115.7)**	**$39.5**

Amounts in millions

Retiree Healthcare Contribution Rate Development

Normal Cost Rate

The table below shows the development of the retiree healthcare normal cost rates. For RHIA, valuation payroll is shown on a system-wide basis. For RHIPA, valuation payroll is for the State of Oregon and the State Judiciary only.

	RHIA		RHIPA	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Normal Cost	$2.5	$3.0	$1.4	$1.5
Tier 1/Tier 2 Valuation Payroll	$4,246.9	$4,516.7	$1,212.2	$1,276.0
Normal Cost Rate	**0.06%**	**0.07%**	**0.12%**	**0.12%**

Amounts in millions

The table below shows the development of the retiree healthcare normal cost rates for the various rate pools. For RHIA, valuation payroll is shown on a system-wide basis. For RHIPA, valuation payroll is for the State of Oregon and the State Judiciary only. For this exhibit, all independent employers, including State Judiciary, have been grouped together.

	December 31, 2017			
	SLGRP	School Districts	Independent Employers	Retiree Healthcare Total
1. Tier 1/ Tier 2 Valuation Payroll				
a. All Employers' Payroll	$2,410.6	$1,443.7	$392.6	$4,246.9
b. RHIPA Employers' Payroll	$1,188.3	$0.0	$23.9	$1,212.2
2. Normal Cost Rate				
a. RHIA	0.06%	0.06%	0.06%	0.06%
b. RHIPA	0.12%	0.00%	0.12%	0.12%
3. Weighted Average Normal Cost Rate ***[(1.a. x 2.a + 1.b. x 2.b.) / 1.a]***	**0.12%**	**0.06%**	**0.07%**	**0.09%**

UAL Rate

The UAL rate is determined by calculating the sum of next year's scheduled amortization payments to the UAL as a percentage of combined (Tier 1/Tier 2 and OPSRP) valuation payroll. For RHIPA, valuation payroll is for the State of Oregon and the State Judiciary only.

For RHIA, the UAL rate calculated under this method was less than 0.00% in this valuation. As a result, the PERS Board decided to apply a minimum UAL rate of 0.00% for the current valuation.

	RHIA		RHIPA	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
1. Total UAL	($115.7)	($1.3)	$39.5	$48.8
2. Next year's UAL payment	($11.1)	$41.9	$8.0	$11.0
3. Combined valuation payroll	$10,098.9	$9,872.6	$2,984.5	$2,881.4
4. UAL rate				
a. Preliminary UAL rate *(2 ÷ 3)*	(0.11%)	0.42%	0.27%	0.38%
b. Final UAL rate *(greater of a. or 0.00%)*	**0.00%**	**0.42%**	**0.27%**	**0.38%**

Amounts in millions

The table below shows the development of the retiree healthcare UAL rates for the various rate pools. For RHIA, combined valuation payroll is shown on a system-wide basis. For RHIPA, valuation payroll is for the State of Oregon and the State Judiciary only. For this exhibit, all independent employers, including State Judiciary, have been grouped together.

	December 31, 2017			
	SLGRP	School Districts	Independent Employers	Retiree Healthcare Total
1. Combined Valuation Payroll				
a. All Employers' Payroll	$5,897.8	$3,314.2	$886.9	$10,098.9
b. RHIPA Employers' Payroll	$2,960.6	$0.0	$23.9	$2,984.5
2. UAL Rate				
a. RHIA	0.00%	0.00%	0.00%	0.00%
b. RHIPA	0.27%	0.00%	0.27%	0.27%
3. Weighted Average UAL Rate *[(1.a. x 2.a + 1.b. x 2.b.) / 1.a]*	**0.14%**	**0.00%**	**0.01%**	**0.08%**

Amounts in millions

Calculated Employer Contribution Rate Summary

The following table summarizes the calculated employer contribution rates for the retiree healthcare programs. The normal cost rates are applied against Tier 1/Tier 2 payroll, but the UAL rates are applied against all payroll. For RHIPA, valuation payroll is for the State of Oregon and the State Judiciary only.

July 1, 2019 Rates Calculated as of December 31, 2017			
	State Agencies and Judiciary	All Other Employers	Retiree Healthcare Total
Normal Cost Rates			
RHIA	0.06%	0.06%	0.06%
RHIPA	0.12%	0.00%	0.03%
Total normal cost rate	**0.18%**	**0.06%**	**0.09%**
UAL Rates			
RHIA	0.00%	0.00%	0.00%
RHIPA	0.27%	0.00%	0.08%
Total UAL rate	**0.27%**	**0.00%**	**0.08%**
Total retiree healthcare rate	**0.45%**	**0.06%**	**0.17%**

Accounting / CAFR Exhibits

Accounting/CAFR Exhibits

The following information as of December 31, 2017 has been prepared and provided to Oregon PERS for inclusion in the Actuarial Section of the 2018 Comprehensive Annual Financial Report (CAFR):

- Schedule of Active Member Valuation Data
- Schedule of Retirees and Beneficiaries Added to and Removed from Rolls
- Schedules of Funding Progress by Rate Pool
- Solvency Test
- Analysis of Financial Experience
- Schedules of Funding Progress

These exhibits do not reflect GASB Statements No. 74 and 75, which were issued by GASB in June 2015 to replace Statements No. 43 and 45, and govern financial reporting for postemployment benefits other than pensions. GASB 74 governs plan reporting effective for fiscal years beginning after June 15, 2016, while GASB 75 governs employer reporting for fiscal years beginning after June 15, 2017. Milliman provided results for Oregon PERS under GASB 74 and 75 determined as of a June 30, 2017 measurement date in letters dated November 29, 2017 and March 20, 2018, respectively. The results for a measurement date of June 30, 2018 will be provided separately.

These exhibits do not reflect GASB Statements No. 67 and 68, issued by GASB in June 2012 to replace Statements No. 25 and 27. GASB 67 governs plan financial reporting effective for fiscal years beginning after June 15, 2013, while GASB 68 governs employer financial reporting for fiscal years beginning after June 15, 2014. Milliman provided results for Oregon PERS under GASB 67 and 68 determined as of a June 30, 2017 measurement date in letters dated November 29, 2017 and February 20, 2018, respectively. The results for a measurement date of June 30, 2018 will be provided separately.

Some employers have made supplemental deposits in addition to their regularly scheduled contributions. These deposits are placed in a side account within the pension trust and used to offset future contribution requirements of that employer. The Schedules of Funding Progress and Solvency Test include side accounts as part of the Plan's assets since those amounts are in a restricted trust available exclusively for the benefit of plan members.

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 Oregon PERS in completing its financial statements, but any accounting determination should be reviewed by your auditor.

The exhibits are provided on the following pages.

Actuarial Schedules

Schedule of Active Member Valuation Data

Valuation Date	Count	Annual Payroll (Thousands)	Average Annual Pay	% Increase in Average Pay	Number of Participating Employers[1]	
12/31/1993	137,513	$4,466,797	$32,483		N/A	
12/31/1995	141,471	$4,848,058	$34,269	5.5%	N/A	
12/31/1997	143,194	$5,161,562	$36,045	5.2%	N/A	
12/31/1999	151,262	$5,676,606	$37,528	4.1%	N/A	
12/31/2000	156,869	$6,195,862	$39,497	5.2%	N/A	
12/31/2001	160,477	$6,520,225	$40,630	2.9%	N/A	Old Basis
12/31/2001	160,477	$6,253,965	$38,971	—	N/A	New Basis[2]
12/31/2002	159,287	$6,383,475	$40,075	2.8%	N/A	
12/31/2003	153,723	$6,248,550	$40,648	1.4%	N/A	
12/31/2004	142,635	$6,306,447	$44,214	8.8%	806	
12/31/2005 [3]	156,501	$6,791,891	$43,398	(1.8%)	810	
12/31/2006	163,261	$7,326,798	$44,878	3.4%	758	
12/31/2007	167,023	$7,721,819	$46,232	3.0%	760	
12/31/2008	170,569	$8,130,136	$47,665	3.1%	766	
12/31/2009	178,606	$8,512,192	$47,659	(0.0%)	776	
12/31/2010	193,569	$8,750,064	$45,204	(5.2%)	787	
12/31/2011	170,972	$8,550,511	$50,011	10.6%	791	
12/31/2012	167,103	$8,590,879	$51,411	2.8%	798	
12/31/2013	162,185	$8,671,835	$53,469	4.0%	799	
12/31/2014	164,859	$9,115,767	$55,294	3.4%	802	
12/31/2015	168,177	$9,544,132	$56,751	2.6%	804	
12/31/2016	172,483	$9,872,557	$57,238	0.9%	805	
12/31/2017	173,002	$10,098,889	$58,374	2.0%	802	

[1] *Effective in 2006, participating employers are defined for this purpose as any employer with covered payroll during the prior year. In prior years, employers with liabilities but without covered payroll were included as well.*

[2] *Effective in 2001, the Annual Payroll excludes the member pick-up, if any.*

[3] *Effective with the 12/31/2005 valuation, OPSRP members and payroll are included.*

Actuarial Schedules

Schedule of Retirees and Beneficiaries Added to and Removed from Rolls

Annual Allowances are shown in thousands.

Valuation Date	Added to Rolls		Removed from Rolls		Rolls - End of Year		% Increase in Annual Allowances[2]	Average Annual Allowances
	Count	Annual Allowances[1]	Count	Annual Allowances	Count	Annual Allowances		
12/31/1993					60,841	$564,341	27.6%	$9,276
12/31/1995					64,796	$700,171	24.1%	$10,806
12/31/1997					69,624	$919,038	31.3%	$13,200
12/31/1999					82,819	$1,299,380	41.4%	$15,689
12/31/2000					82,458	$1,385,556	6.6%	$16,803
12/31/2001					85,216	$1,514,491	9.3%	$17,772
12/31/2002					89,482	$1,722,865	13.8%	$19,254
12/31/2003					97,777	$2,040,533	8.4%	$20,869
12/31/2004 [3]	6,754	$149,474	2,863	$35,151	101,668	$2,154,856	5.6%	$21,195
12/31/2005 [3]	4,472	$149,127	3,217	$36,784	102,923	$2,267,198	5.2%	$22,028
12/31/2006 [3]	5,060	$151,240	3,263	$39,735	104,720	$2,378,704	4.9%	$22,715
12/31/2007 [3]	5,385	$183,232	3,304	$40,590	106,801	$2,521,345	6.0%	$23,608
12/31/2008 [3]	5,963	$171,484	3,626	$47,062	109,138	$2,645,767	4.9%	$24,242
12/31/2009 [3]	6,377	$226,713	3,374	$46,228	112,141	$2,826,252	6.8%	$25,203
12/31/2010 [3]	6,359	$217,424	3,512	$51,627	114,988	$2,992,048	5.9%	$26,021
12/31/2011 [3]	8,715	$282,098	3,679	$55,633	120,024	$3,218,514	7.6%	$26,816
12/31/2012 [3]	7,023	$235,917	4,875	$59,353	122,172	$3,395,079	5.5%	$27,789
12/31/2013	9,724	$307,551	3,644	$66,607	128,252	$3,636,023	7.1%	$28,351
12/31/2014 [4]	6,910	$235,250	3,524	$66,621	131,638	$3,804,651	4.6%	$28,902
12/31/2015 [4]	8,566	$304,818	3,781	$73,305	136,423	$4,036,165	6.1%	$29,586
12/31/2016 [4]	6,413	$242,372	3,931	$80,903	138,905	$4,197,633	4.0%	$30,219
12/31/2017 [4]	10,075	$385,197	3,878	$83,921	145,102	$4,498,910	7.2%	$31,005

[1] *Additions to annual allowances reflect the combined effects of new retirements and COLA increases since the previous valuation date.*

[2] *Since last valuation date.*

[3] *Annual allowances reflect estimated adjustments to retiree benefits due to the implementation of the Strunk v. PERB, et al. and City of Eugene v. State of Oregon, PERB, et al. decisions.*

[4] *Annual allowances reflect estimated adjustments to retiree benefits for the Moro v. State of Oregon decision for records that were not already adjusted in the data provided.*

Actuarial Schedules

Schedule of Funding Progress by Rate Pool

The liabilities and assets resulting from the last six actuarial valuations are as follows *(dollar amounts in millions)*:

Actuarial Valuation Date	Actuarial Value of Assets[1,2] (a)	Actuarial Accrued Liability (AAL)[2] (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll[3] (c)	UAAL as a % of Covered Payroll ((b-a)/c)
Tier 1/Tier 2 State & Local Government Rate Pool						
12/31/2012 [4]	$28,022.3	$30,601.9	$2,579.5	91.6%	$3,043.7	84.7%
12/31/2013 [5]	$30,590.2	$31,738.8	$1,148.6	96.4%	$2,915.9	39.4%
12/31/2014 [6]	$31,162.6	$37,169.9	$6,007.3	83.8%	$2,827.9	212.4%
12/31/2015 [5]	$30,185.3	$38,396.8	$8,211.5	78.6%	$2,691.8	305.1%
12/31/2016	$30,417.6	$40,351.3	$9,933.7	75.4%	$2,546.7	390.1%
12/31/2017 [5]	$33,366.0	$42,150.7	$8,784.7	79.2%	$2,410.6	364.4%
Tier 1/Tier 2 School District Rate Pool						
12/31/2012 [4]	$21,202.1	$22,908.0	$1,705.8	92.6%	$1,769.0	96.4%
12/31/2013	$23,063.3	$23,392.6	$329.4	98.6%	$1,663.0	19.8%
12/31/2014 [6]	$23,361.2	$27,059.9	$3,698.7	86.3%	$1,626.0	227.5%
12/31/2015	$22,728.9	$27,670.7	$4,941.8	82.1%	$1,578.8	313.0%
12/31/2016	$22,870.2	$29,152.2	$6,282.0	78.5%	$1,532.7	409.9%
12/31/2017	$24,934.4	$29,677.4	$4,743.1	84.0%	$1,443.7	328.5%
Tier 1/Tier 2 Independent Employers and Judiciary						
12/31/2012 [4]	$4,479.4	$5,043.4	$564.0	88.8%	$529.0	106.6%
12/31/2013 [5]	$4,851.0	$5,164.3	$313.3	93.9%	$494.8	63.3%
12/31/2014 [6]	$4,967.4	$6,104.9	$1,137.4	81.4%	$479.2	237.4%
12/31/2015 [5]	$4,807.6	$6,327.1	$1,519.5	76.0%	$460.3	330.1%
12/31/2016	$4,856.6	$6,690.8	$1,834.3	72.6%	$437.3	419.5%
12/31/2017 [5]	$5,018.2	$6,536.3	$1,518.1	76.8%	$392.6	386.7%
OPSRP Rate Pool						
12/31/2012 [4]	$1,190.0	$1,795.6	$605.5	66.3%	$3,249.2	18.6%
12/31/2013	$1,630.2	$2,243.3	$613.2	72.7%	$3,598.1	17.0%
12/31/2014 [6]	$2,024.6	$3,064.1	$1,039.5	66.1%	$4,182.7	24.9%
12/31/2015	$2,389.1	$3,742.5	$1,353.5	63.8%	$4,813.3	28.1%
12/31/2016	$3,021.4	$4,717.0	$1,695.6	64.1%	$5,355.8	31.7%
12/31/2017	$4,116.5	$5,634.7	$1,518.2	73.1%	$5,852.0	25.9%
Postemployment Healthcare Benefits - Retirement Health Insurance Account						
12/31/2012	$291.6	$471.8	$180.2	61.8%	$5,341.7	3.4%
12/31/2013	$353.5	$473.6	$120.0	74.7%	$5,073.7	2.4%
12/31/2014	$395.9	$468.4	$72.5	84.5%	$4,933.1	1.5%
12/31/2015	$419.3	$465.6	$46.3	90.0%	$4,730.8	1.0%
12/31/2016	$465.0	$463.7	($1.3)	100.3%	$4,516.7	(0.0%)
12/31/2017	$553.3	$437.6	($115.7)	126.4%	$4,246.9	(2.7%)
Postemployment Healthcare Benefits - Retiree Health Insurance Premium Account						
12/31/2012	$4.4	$60.3	$55.9	7.4%	$1,478.4	3.8%
12/31/2013	$5.2	$61.2	$55.9	8.6%	$1,434.5	3.9%
12/31/2014	$7.2	$70.5	$63.3	10.2%	$1,406.3	4.5%
12/31/2015	$11.2	$67.8	$56.6	16.5%	$1,339.4	4.2%
12/31/2016	$19.1	$67.9	$48.8	28.1%	$1,276.0	3.8%
12/31/2017	$29.8	$69.4	$39.5	43.0%	$1,212.2	3.3%

Notes:

[1] *Side account assets are included with Tier 1/Tier 2 assets.*

[2] *Excludes effect of Multnomah Fire District (net UAAL of $166 million as of 12/31/2017).*

[3] *Covered payroll shown is for members of the rate pool benefiting from the specified program. For example, Tier 1/Tier 2 School District payroll is only payroll for Tier 1/Tier 2 members and excludes OPSRP. However, UAL is amortized using combined Tier 1/Tier 2 and*

[4] *The 12/31/2012 valuation reflects the benefit changes enacted by the 2013 Oregon Legislature in Senate Bills 822 and 861, as well as a change in cost method to Entry Age Normal.*

[5] *Reflects the transfer in assets and liabilities for new employers that joined the SLGRP effective January 1 following the valuation date.*

[6] *The 12/31/2014 valuation reflects benefit changes from the Oregon Supreme Court's ruling in Moro v. State of Oregon, which overturned portions of Senate Bills 822 and 861.*

Actuarial Schedules

Solvency Test

Pension and Retiree Healthcare Plans Combined

(dollar amounts in millions)

The schedule below shows results from the defined benefit pension plans and retiree healthcare plans on a consolidated basis. Results are also shown separately for each program: Tier 1/Tier 2, OPSRP, and retiree healthcare. Note that the defined benefit pension plan constitutes over 99% of the consolidated assets and liabilities.

	Actuarial Accrued Liability[1]				Portion of Actuarial Accrued Liabilities Covered by Assets		
Valuation Date[2]	Active Member Contributions (1)	Retired Members and Beneficiaries (2)	Other Members (3)	Valuation Assets[1,3]	(1)	(2)	(3)
12/31/2008	$8,341.5	$30,537.7	$15,895.7	$43,710.2	100%	100%	30%
12/31/2009 [4]	$8,392.0	$32,484.2	$16,470.1	$48,949.7	100%	100%	49%
12/31/2010	$8,407.9	$34,432.5	$17,070.2	$51,821.6	100%	100%	53%
12/31/2011 [4]	$7,779.7	$37,362.4	$16,551.8	$50,412.4	100%	100%	32%
12/31/2012 [5]	$7,704.9	$36,759.3	$16,473.1	$55,080.1	100%	100%	64%
12/31/2013 [4]	$7,120.1	$39,531.5	$16,476.8	$60,372.9	100%	100%	83%
12/31/2014 [6]	$6,950.4	$46,576.7	$20,470.8	$61,798.3	100%	100%	40%
12/31/2015 [4]	$6,476.8	$49,158.7	$21,094.5	$60,430.6	100%	100%	23%
12/31/2016	$6,168.1	$52,232.7	$23,101.0	$61,543.2	100%	100%	14%
12/31/2017 [4]	$5,585.9	$55,636.9	$23,340.3	$67,909.2	100%	100%	29%

[1] *Includes effect of Multnomah Fire District (net UAAL of $166 million as of 12/31/2017).*

[2] *An extensive revision of the actuarial assumptions occurs prior to each even-year valuation; therefore, the figures are not directly comparable.*

[3] *Includes the value of UAL Lump Sum Side Accounts.*

[4] *Reflects the transfer in assets and liabilities for new employers that joined the SLGRP effective January 1 following the valuation date.*

[5] *The 12/31/2012 valuation reflects the benefit changes enacted by the 2013 Oregon Legislature in Senate Bills 822 and 861, as well as a change in cost method to Entry Age Normal.*

[6] *The 12/31/2014 valuation reflects benefit changes from the Oregon Supreme Court's ruling in Moro v. State of Oregon, which overturned portions of Senate Bills 822 and 861.*

Actuarial Schedules

Solvency Test

Tier 1/Tier 2 Pension

(dollar amounts in millions)

Valuation Date[2]	Actuarial Accrued Liability[1] Active Member Contributions (1)	Retired Members and Beneficiaries (2)	Other Members (3)	Valuation Assets[1,3]	Portion of Actuarial Accrued Liabilities Covered by Assets (1)	(2)	(3)
12/31/2012 [4]	$7,704.9	$36,377.3	$14,527.4	$53,594.0	100%	100%	65%
12/31/2013 [5]	$7,120.1	$39,116.2	$14,114.1	$58,384.0	100%	100%	86%
12/31/2014 [6]	$6,950.4	$46,113.5	$17,331.0	$59,370.6	100%	100%	36%
12/31/2015 [5]	$6,476.8	$48,641.5	$17,335.7	$57,611.0	100%	100%	14%
12/31/2016	$6,168.1	$51,655.5	$18,429.6	$58,037.6	100%	100%	1%
12/31/2017 [5]	$5,585.9	$54,967.4	$17,868.1	$63,209.7	100%	100%	15%

[1] *Includes effect of Multnomah Fire District (net UAAL of $166 million as of 12/31/2017).*

[2] *An extensive revision of the actuarial assumptions occurs prior to each even-year valuation; therefore, the figures are not directly comparable.*

[3] *Includes the value of UAL Lump Sum Side Accounts.*

[4] *The 12/31/2012 valuation reflects the benefit changes enacted by the 2013 Oregon Legislature in Senate Bills 822 and 861, as well as a change in cost method to Entry Age Normal.*

[5] *Reflects the transfer in assets and liabilities for new employers that joined the SLGRP effective January 1 following the valuation date.*

[6] *The 12/31/2014 valuation reflects benefit changes from the Oregon Supreme Court's ruling in Moro v. State of Oregon, which overturned portions of Senate Bills 822 and 861.*

OPSRP Pension

(dollar amounts in millions)

Valuation Date[1]	Actuarial Accrued Liability Active Member Contributions (1)	Retired Members and Beneficiaries (2)	Other Members (3)	Valuation Assets	Portion of Actuarial Accrued Liabilities Covered by Assets (1)	(2)	(3)
12/31/2012 [2]	$0.0	$28.6	$1,766.9	$1,190.0	100%	100%	66%
12/31/2013	$0.0	$51.2	$2,192.1	$1,630.2	100%	100%	72%
12/31/2014 [3]	$0.0	$92.4	$2,971.6	$2,024.6	100%	100%	65%
12/31/2015	$0.0	$144.6	$3,597.9	$2,389.1	100%	100%	62%
12/31/2016	$0.0	$201.1	$4,515.9	$3,021.4	100%	100%	62%
12/31/2017	$0.0	$310.1	$5,324.5	$4,116.5	100%	100%	71%

[1] *An extensive revision of the actuarial assumptions occurs prior to each even-year valuation; therefore, the figures are not directly comparable.*

[2] *The 12/31/2012 valuation reflects the benefit changes enacted by the 2013 Oregon Legislature in Senate Bills 822 and 861, as well as a change in cost method to Entry Age Normal.*

[3] *The 12/31/2014 valuation reflects benefit changes from the Oregon Supreme Court's ruling in Moro v. State of Oregon, which overturned portions of Senate Bills 822 and 861.*

Retiree Healthcare (RHIA and RHIPA)

(dollar amounts in millions)

Retiree Health Insurance Account (RHIA)							
	Actuarial Accrued Liability						
Valuation Date[1]	Active Member Contributions (1)	Retired Members and Beneficiaries (2)	Other Members (3)	Valuation Assets	Portion of Actuarial Accrued Liabilities Covered by Assets (1)	(2)	(3)
12/31/2012 [2]	$0.0	$338.3	$133.5	$291.6	100%	86%	0%
12/31/2013	$0.0	$348.0	$125.6	$353.5	100%	100%	4%
12/31/2014	$0.0	$355.1	$113.3	$395.9	100%	100%	36%
12/31/2015	$0.0	$357.7	$107.9	$419.3	100%	100%	57%
12/31/2016	$0.0	$361.7	$102.0	$465.0	100%	100%	101%
12/31/2017	$0.0	$343.9	$93.7	$553.3	100%	100%	224%

[1] An extensive revision of the actuarial assumptions occurs prior to each even-year valuation; therefore, the figures are not directly comparable.

[2] The 12/31/2012 valuation reflects a change in cost method to Entry Age Normal.

Retiree Health Insurance Premium Account (RHIPA)							
	Actuarial Accrued Liability						
Valuation Date[1]	Active Member Contributions (1)	Retired Members and Beneficiaries (2)	Other Members (3)	Valuation Assets	Portion of Actuarial Accrued Liabilities Covered by Assets (1)	(2)	(3)
12/31/2012 [2]	$0.0	$15.1	$45.3	$4.4	100%	29%	0%
12/31/2013	$0.0	$16.1	$45.1	$5.2	100%	33%	0%
12/31/2014	$0.0	$15.7	$54.9	$7.2	100%	46%	0%
12/31/2015	$0.0	$14.9	$52.9	$11.2	100%	75%	0%
12/31/2016	$0.0	$14.4	$53.5	$19.1	100%	100%	9%
12/31/2017	$0.0	$15.4	$54.0	$29.8	100%	100%	27%

[1] An extensive revision of the actuarial assumptions occurs prior to each even-year valuation; therefore, the figures are not directly comparable.

[2] The 12/31/2012 valuation reflects a change in cost method to Entry Age Normal.

Actuarial Schedules

Analysis of Financial Experience

The schedule below shows results from the defined benefit pension plans and retiree healthcare plans on a consolidated basis. Results are also shown separately for each program on subsequent pages.

Gains and Losses in Unfunded Accrued Liability Resulting from Differences Between Assumed Experience and Actual Experience and Assumption Changes

(dollar amounts in millions)

	$ Gain (or Loss) for Year	
Pension and Retiree Healthcare Plans	**2017**	**2016**
Type of Activity		
Retirements from Active Status	($143.9)	$69.0
Active Mortality and Withdrawal	(2.3)	(88.4)
Pay Increases	(168.4)	37.0
Contributions	94.2	98.5
Interest Crediting Experience	(95.7)	(5.4)
Investment Income	4,854.2	(38.5)
Retirement, Mortality and Lump Sums from Inactive Status	18.0	(0.4)
Retiree and Beneficiary Mortality	(34.6)	(5.9)
New Entrants	(68.3)	(80.2)
Other	(225.8)	0.3
Gain (or Loss) During Year from Financial Experience	**$4,227.3**	**($14.1)**
Non-Recurring Items		
Assumption Changes	0.0	(2,272.3)
Plan Changes	0.0	0.0
Composite Gain (or Loss) During Year	**$4,227.3**	**($2,286.3)**

The schedules below show results from the Tier 1/Tier 2 and OPSRP pension programs separately.

Gains and Losses in Unfunded Accrued Liability Resulting from Differences between Assumed Experience and Actual Experience and Assumption Changes

(dollar amounts in millions)

Tier 1/Tier 2 Pension Program	$ Gain (or Loss) for Year	
	2017	2016
Type of Activity		
Retirements from Active Status	($145.1)	$66.9
Active Mortality and Withdrawal	(12.5)	(65.7)
Pay Increases	(70.7)	36.6
Contributions	49.4	78.4
Interest Crediting Experience	(95.7)	(5.4)
Investment Income	4,496.6	(46.8)
Retirement, Mortality and Lump Sums from Inactive Status	15.9	(1.8)
Retiree and Beneficiary Mortality	(34.6)	(6.5)
New Entrants	(1.2)	(0.5)
Other	(297.0)	7.8
Gain (or Loss) During Year from Financial Experience	**$3,905.1**	**$62.9**
Non-Recurring Items		
Assumption Changes	0.0	(2,096.4)
Plan Changes	0.0	0.0
Composite Gain (or Loss) During Year	**$3,905.1**	**($2,033.5)**

OPSRP Pension Program	$ Gain (or Loss) for Year	
	2017	2016
Type of Activity		
Retirements from Active Status	$1.1	$2.1
Active Mortality and Withdrawal	10.2	(22.7)
Pay Increases	(97.7)	0.4
Contributions	41.6	18.0
Investment Income	317.5	9.5
Retirement, Mortality and Lump Sums from Inactive Status	2.0	1.3
Retiree and Beneficiary Mortality	(0.1)	0.6
New Entrants	(67.1)	(79.7)
Other	42.0	(18.4)
Gain (or Loss) During Year from Financial Experience	**$249.7**	**($88.8)**
Non-Recurring Items		
Assumption Changes	0.0	(173.7)
Plan Changes	0.0	0.0
Composite Gain (or Loss) During Year	**$249.7**	**($262.5)**

The schedule below shows results from the retiree healthcare programs.

Gains and Losses in Unfunded Accrued Liability Resulting from Differences Between Assumed Experience and Actual Experience and Assumption Changes

(dollar amounts in millions)

Retiree Healthcare Programs	$ Gain (or Loss) for Year RHIA 2017	RHIA 2016	RHIPA 2017	RHIPA 2016
Type of Activity				
Contributions	$2.4	($0.8)	$0.9	$2.9
Investment Income	38.7	(1.0)	1.3	(0.2)
Other	29.0	8.2	0.2	2.7
Gain (or Loss) During Year from Financial Experience	**$70.2**	**$6.4**	**$2.3**	**$5.4**
Non-Recurring Items				
Assumption Changes	0.0	(1.5)	0.0	(0.7)
Plan Changes	0.0	0.0	0.0	0.0
Composite Gain (or Loss) During Year	**$70.2**	**$4.9**	**$2.3**	**$4.8**

Actuarial Schedules

Schedules of Funding Progress

(dollar amounts in millions)

Actuarial Valuation Date	Actuarial Value of Assets[1] (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ((b-a)/c)
Pension Benefits - Tier 1/Tier 2 and OPSRP[2]						
12/31/2008	$43,520.6	$54,259.5	$10,738.9	80.2%	$8,130.1	132.1%
12/31/2009 [3]	$48,729.2	$56,810.6	$8,081.4	85.8%	$8,512.2	94.9%
12/31/2010	$51,583.6	$59,329.5	$7,746.0	86.9%	$8,750.1	88.5%
12/31/2011 [3]	$50,168.2	$61,198.4	$11,030.2	82.0%	$8,550.5	129.0%
12/31/2012 [4]	$54,784.1	$60,405.2	$5,621.1	90.7%	$8,590.9	65.4%
12/31/2013 [3]	$60,014.1	$62,593.6	$2,579.5	95.9%	$8,671.8	29.7%
12/31/2014 [5]	$61,395.2	$73,458.9	$12,063.7	83.6%	$9,115.8	132.3%
12/31/2015 [3]	$60,000.1	$76,196.6	$16,196.5	78.7%	$9,544.1	169.7%
12/31/2016	$61,059.0	$80,970.3	$19,911.2	75.4%	$9,872.6	201.7%
12/31/2017 [3]	$67,326.1	$84,056.1	$16,730.0	80.1%	$10,098.9	165.7%
Postemployment Healthcare Benefits - Retirement Health Insurance Account						
12/31/2008	$183.8	$494.0	$310.2	37.2%	$8,130.1	3.8%
12/31/2009	$214.1	$511.2	$297.1	41.9%	$8,512.2	3.5%
12/31/2010	$232.3	$547.1	$314.8	42.5%	$8,750.1	3.6%
12/31/2011	$239.6	$461.1	$221.5	52.0%	$8,550.5	2.6%
12/31/2012	$291.6	$471.8	$180.2	61.8%	$8,590.9	2.1%
12/31/2013	$353.5	$473.6	$120.0	74.7%	$8,671.8	1.4%
12/31/2014	$395.9	$468.4	$72.5	84.5%	$9,115.8	0.8%
12/31/2015	$419.3	$465.6	$46.3	90.0%	$9,544.1	0.5%
12/31/2016	$465.0	$463.7	($1.3)	100.3%	$9,872.6	(0.0%)
12/31/2017	$553.3	$437.6	($115.7)	126.4%	$10,098.9	(1.1%)
Postemployment Healthcare Benefits - Retiree Health Insurance Premium Account						
12/31/2008	$5.7	$21.3	$15.6	26.7%	$2,217.9	0.7%
12/31/2009	$6.4	$24.5	$18.2	25.9%	$2,371.8	0.8%
12/31/2010	$5.7	$33.9	$28.2	16.8%	$2,379.7	1.2%
12/31/2011	$4.5	$34.4	$29.9	13.2%	$2,376.9	1.3%
12/31/2012	$4.4	$60.3	$55.9	7.4%	$2,432.4	2.3%
12/31/2013	$5.2	$61.2	$55.9	8.6%	$2,531.5	2.2%
12/31/2014	$7.2	$70.5	$63.3	10.2%	$2,718.9	2.3%
12/31/2015	$11.2	$67.8	$56.6	16.5%	$2,831.8	2.0%
12/31/2016	$19.1	$67.9	$48.8	28.1%	$2,881.4	1.7%
12/31/2017	$29.8	$69.4	$39.5	43.0%	$2,984.5	1.3%

Notes:

[1] *Side account assets are included with pension assets.*

[2] *Includes UAAL for Multnomah Fire District ($166 million as of 12/31/2017).*

[3] *Reflects the transfer in assets and liabilities for new employers that joined the SLGRP effective January 1 following the valuation date.*

[4] *The 12/31/2012 valuation reflects the benefit changes enacted by the 2013 Oregon Legislature in Senate Bills 822 and 861, as well as a change in cost method to Entry Age Normal.*

[5] *The 12/31/2014 valuation reflects benefit changes from the Oregon Supreme Court's ruling in Moro v. State of Oregon, which overturned portions of Senate Bills 822 and 861.*

Data Exhibits

This valuation is based upon the membership of the System as of December 31, 2017.

System Wide Data Exhibits

Valuation Pay and Census Exhibit

The following tables illustrate the breakdown of member counts and valuation payroll for the SLGRP, School District Pool, and independent employers.

SLGRP

	General Service	Police & Fire	Total
Tier 1	$845.4	$165.8	$1,011.3
Tier 2	1,095.5	303.8	1,399.3
Tier 1/Tier 2 Valuation Payroll	1,941.0	469.6	2,410.6
OPSRP Valuation Payroll	2,961.3	525.9	3,487.2
Combined Valuation Payroll	**$4,902.3**	**$995.5**	**$5,897.8**

Amounts in millions

	December 31				
	2017				2016
	Tier 1	Tier 2	OPSRP	Total	Total
Active Members in the Pool					
General Service	10,415	14,939	52,470	77,824	77,720
Police & Fire	1,662	3,381	7,184	12,227	12,449
Total	12,077	18,320	59,654	90,051	90,169
Average Age	56.4	51.5	42.7	46.3	46.5
Average Service	25.7	17.1	6.1	11.0	11.1
Average prior year Covered Salary	$85,956	$77,456	$55,049	$63,752	62,170
Active Members outside the Pool with previous Segments in the Pool					
General Service	2,486	2,402		4,888	6,812
Police & Fire	242	327		569	641
Total	2,728	2,729		5,457	7,453
Average Age	55.1	48.8		51.9	51.4
Average Service in the Pool	3.0	2.7		2.9	2.3
Inactive Members[1]					
General Service	8,383	8,417	8,877	25,677	26,025
Police & Fire	549	725	1,052	2,326	1,940
Total	8,932	9,142	9,929	28,003	27,965
Average Age	59.0	53.4	46.8	52.8	53.4
Average Monthly Benefit	$1,941	$765	$457	$1,031	1,060
Retired Members and Beneficiaries[1]					
General Service	67,565	7,267	2,440	77,272	73,059
Police & Fire	9,669	1,052	226	10,947	10,310
Total	77,234	8,319	2,666	88,219	83,369
Average Age	71.7	67.6	66.8	71.2	71.0
Average Monthly Benefit[2]	$2,387	$1,017	$505	$2,201	$2,122
Grand Total Number of Members	**100,971**	**38,510**	**72,249**	**211,730**	**208,956**

[1] *In these exhibits, Inactives and Retirees are counted by members with service in each rate pool. As a result, individual members with service segments in more than one rate pool will be included in more than one exhibit.*

[2] *The average monthly benefit reflects an estimated adjustment for the effect of the Supreme Court decision in Moro v. State of Oregon for records that were not already adjusted in the data provided.*

School District Pool

	General Service	Police & Fire	Total
Tier 1	$569.1	$1.3	$570.5
Tier 2	871.9	1.3	873.2
Tier 1/Tier 2 Valuation Payroll	1,441.0	2.7	1,443.7
OPSRP Valuation Payroll	1,869.2	1.3	1,870.5
Combined Valuation Payroll	**$3,310.3**	**$4.0**	**$3,314.2**

Amounts in millions

	December 31				
	2017				2016
	Tier 1	Tier 2	OPSRP	Total	Total
Active Members					
General Service	8,907	14,805	46,358	70,070	69,038
Police & Fire	19	22	24	65	65
Total	8,926	14,827	46,382	70,135	69,103
Average Age	55.9	51.0	42.9	46.2	46.4
Average Service	24.8	16.6	6.2	10.8	11.0
Average prior year Covered Salary	$64,971	$59,345	$38,469	$46,255	45,979
Active Members outside the Pool with previous Segments in the Pool					
General Service	1,055	1,224		2,279	2,835
Police & Fire	4	6		10	11
Total	1,059	1,230		2,289	2,846
Average Age	56.1	49.9		52.8	53
Average Service	5.5	4.3		4.9	4.3
Inactive Members[1]					
General Service	5,311	6,664	6,260	18,235	18,313
Police & Fire	10	18	4	32	37
Total	5,321	6,682	6,264	18,267	18,350
Average Age	59.8	53.2	48.4	53.5	53.7
Average Monthly Benefit	$1,556	$565	$321	$770	787.9
Retired Members and Beneficiaries[1]					
General Service	62,633	4,681	1,116	68,430	66,261
Police & Fire	194	37	6	237	230
Total	62,827	4,718	1,122	68,667	66,491
Average Age	72.8	67.0	66.7	72.3	72.2
Average Monthly Benefit[2]	$2,347	$761	$403	$2,206	$2,169
Grand Total Number of Members	**78,133**	**27,457**	**53,768**	**159,358**	**156,790**

[1] *In these exhibits, Inactives and Retirees are counted by members with service in each rate pool. As a result, individual members with service segments in more than one rate pool will be included in more than one exhibit.*

[2] *The average monthly benefit reflects an estimated adjustment for the effect of the Supreme Court decision in Moro v. State of Oregon for records that were not already adjusted in the data provided.*

Independents

	General Service	Police & Fire	Total
Tier 1	$108.1	$54.2	$162.3
Tier 2	137.2	93.0	230.3
Tier 1/Tier 2 Valuation Payroll	245.4	147.3	392.6
OPSRP Valuation Payroll	357.0	137.3	494.3
Combined Valuation Payroll	**$602.3**	**$284.5**	**$886.9**

Amounts in millions

	December 31				
	2017				2016
	Tier 1	Tier 2	OPSRP	Total	Total
Active Members					
General Service	1,272	1,921	6,587	9,780	10,207
Police & Fire	474	890	1,672	3,036	3,004
Total	1,746	2,811	8,259	12,816	13,211
Average Age	55.1	50.2	41.5	45.3	45.7
Average Service	23.9	17.0	6.0	10.8	11.2
Average prior year Covered Salary	$95,995	$83,101	$56,211	$67,529	68,141
Active Members outside the Pool with previous Segments in the Pool					
General Service	860	1,121		1,981	2,244
Police & Fire	206	305		511	563
Total	1,066	1,426		2,492	2,807
Average Age	54.5	48.8		51.2	51.0
Average Service	4.8	3.9		4.3	3.8
Inactive Members[1]					
General Service	1,088	1,296	1,035	3,419	3,673
Police & Fire	184	186	121	491	524
Total	1,272	1,482	1,156	3,910	4,197
Average Age	57.8	53.2	48.3	53.2	53.4
Average Monthly Benefit	$1,309	$632	$425	$791	862
Retired Members and Beneficiaries[1]					
General Service	9,220	1,248	300	10,768	10,676
Police & Fire	3,185	157	27	3,369	3,162
Total	12,405	1,405	327	14,137	13,838
Average Age	70.2	67.0	66.6	69.8	69.7
Average Monthly Benefit[2]	$2,248	$838	$520	$2,068	$2,071
Grand Total Number of Members	**16,489**	**7,124**	**9,742**	**33,355**	**34,053**

[1] *In these exhibits, Inactives and Retirees are counted by members with service in each rate pool. As a result, individual members with service segments in more than one rate pool will be included in more than one exhibit.*

[2] *The average monthly benefit reflects an estimated adjustment for the effect of the Supreme Court decision in Moro v. State of Oregon for records that were not already adjusted in the data provided.*

Total

	General Service	Police & Fire	Total
Tier 1	$1,522.7	$221.4	$1,744.1
Tier 2	2,104.7	398.1	2,502.8
Tier 1/Tier 2 Valuation Payroll	3,627.4	619.5	4,246.9
OPSRP Valuation Payroll	5,187.5	664.5	5,852.0
Combined Valuation Payroll	**$8,814.8**	**$1,284.0**	**$10,098.9**

Amounts in millions

	December 31				
	2017				2016
	Tier 1	Tier 2	OPSRP	Total	Total
Active Members					
General Service	20,594	31,665	105,415	157,674	156,965
Police & Fire	2,155	4,293	8,880	15,328	15,518
Total	22,749	35,958	114,295	173,002	172,483
Average Age	56.1	51.2	42.7	46.2	46.4
Average Service	25.2	16.9	6.1	10.9	11.1
Average prior year Covered Salary	$78,492	$70,429	$48,405	$56,939	56,140
Inactive Members[1]					
General Service	14,782	16,377	16,172	47,331	48,011
Police & Fire	743	929	1,177	2,849	2,501
Total	15,525	17,306	17,349	50,180	50,512
Average Age	59.2	53.3	47.5	53.1	53.5
Average Monthly Benefit	$1,757	$677	$406	$917	945
Retired Members and Beneficiaries[1]					
General Service	139,418	13,196	3,856	156,470	149,996
Police & Fire	13,048	1,246	259	14,553	13,702
Total	152,466	14,442	4,115	171,023	163,698
Average Age	72.0	67.3	66.8	71.5	71.4
Average Monthly Benefit[2]	$2,359	$916	$478	$2,192	$2,137
Grand Total Number of Members	**190,740**	**67,706**	**135,759**	**394,205**	**386,693**

[1] *In these exhibits, Inactives and Retirees are counted by members with service in each rate pool. As a result, individual members with service segments in more than one rate pool are counted more than once in this exhibit.*

[2] *The average monthly benefit reflects an estimated adjustment for the effect of the Supreme Court decision in Moro v. State of Oregon for records that were not already adjusted in the data provided.*

Age/Service and Prior Year Covered Payroll by Tier and Job Class

Tier 1 General Service Active Members

		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
<20		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
20-24		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
25-29		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
30-34		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
35-39		0	0	0	0	2	0	0	0	0	**2**
	$	0	0	0	0	92,255	0	0	0	0	**92,255**
40-44		10	4	11	34	181	8	0	0	0	**248**
	$	110,587	104,839	58,495	72,479	70,008	89,019	0	0	0	**72,647**
45-49		19	52	91	211	1,772	417	6	0	0	**2,568**
	$	97,495	59,053	55,326	70,662	79,028	77,729	60,462	0	0	**76,979**
50-54		9	60	104	246	2,166	1,978	319	6	0	**4,888**
	$	109,083	69,121	56,490	65,097	78,698	81,682	78,348	76,519	0	**78,661**
55-59		10	51	113	271	2,234	2,440	1,071	149	1	**6,340**
	$	107,084	61,783	62,765	68,977	70,542	77,781	82,641	76,696	79,865	**75,300**
60-64		3	34	71	154	1,717	1,751	704	283	39	**4,756**
	$	101,041	66,559	73,691	66,417	65,913	74,482	81,740	77,316	70,775	**72,288**
65-69		3	8	37	61	503	510	231	100	31	**1,484**
	$	106,119	56,468	75,825	69,426	66,078	77,029	88,449	95,157	84,276	**76,073**
70-74		0	1	3	6	72	87	38	17	21	**245**
	$	0	27,699	104,983	81,818	60,945	85,480	78,729	86,814	111,587	**79,466**
75+		0	0	1	3	13	18	11	4	13	**63**
	$	0	0	14,641	50,493	37,068	78,009	58,398	121,314	84,513	**67,912**
Total		**54**	**210**	**431**	**986**	**8,660**	**7,209**	**2,380**	**559**	**105**	**20,594**
	$	**104,303**	**64,432**	**62,674**	**68,140**	**73,005**	**78,100**	**82,133**	**80,937**	**84,711**	**75,664**

Tier 2 General Service Active Members

		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
<20		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
20-24		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
25-29		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
30-34		1	4	47	22	0	0	0	0	0	**74**
	$	147,981	58,142	56,435	53,973	0	0	0	0	0	**57,032**
35-39		1	56	904	644	8	0	0	0	0	**1,613**
	$	17,513	47,737	68,361	66,735	70,814	0	0	0	0	**66,977**
40-44		9	175	1,536	3,717	236	0	0	0	0	**5,673**
	$	18,188	46,408	69,230	74,710	76,863	0	0	0	0	**72,353**
45-49		10	130	1,259	4,279	778	0	0	0	0	**6,456**
	$	16,850	42,100	69,061	74,556	78,751	0	0	0	0	**73,247**
50-54		4	75	1,028	3,920	662	0	0	0	0	**5,689**
	$	11,254	52,827	64,157	69,182	72,932	0	0	0	0	**68,454**
55-59		6	59	958	4,076	761	0	0	0	0	**5,860**
	$	29,010	50,133	58,657	62,176	66,156	0	0	0	0	**61,963**
60-64		7	46	675	3,151	640	0	0	0	0	**4,519**
	$	22,516	40,058	58,298	60,465	65,357	0	0	0	0	**60,568**
65-69		9	20	213	1,002	178	0	0	0	0	**1,422**
	$	25,062	49,010	60,026	59,414	63,658	0	0	0	0	**59,673**
70-74		2	12	51	195	31	0	0	0	0	**291**
	$	16,123	35,919	57,653	57,493	57,948	0	0	0	0	**56,396**
75+		2	1	19	43	3	0	0	0	0	**68**
	$	9,600	23,192	36,747	54,268	34,253	0	0	0	0	**46,719**
Total		**51**	**578**	**6,690**	**21,049**	**3,297**	**0**	**0**	**0**	**0**	**31,665**
	$	**22,576**	**46,189**	**65,121**	**67,895**	**70,870**	**0**	**0**	**0**	**0**	**67,149**

Tier 1 Police and Fire Active Members

		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
<20		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
20-24		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
25-29		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
30-34		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
35-39		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
40-44		0	0	1	6	64	1	0	0	0	**72**
	$	0	0	68,859	105,616	112,137	181,625	0	0	0	**111,958**
45-49		0	1	1	21	560	137	1	0	0	**721**
	$	0	94,767	58,739	86,403	108,891	117,431	80,748	0	0	**109,730**
50-54		0	2	2	15	372	329	37	0	0	**757**
	$	0	31,948	81,853	93,737	106,268	110,862	110,266	0	0	**107,951**
55-59		1	0	3	7	130	176	65	5	0	**387**
	$	28,186	0	52,994	80,406	96,868	100,299	112,577	118,192	0	**100,527**
60-64		0	0	1	3	59	70	25	19	2	**179**
	$	0	0	117,361	88,039	85,408	89,168	95,966	112,395	72,400	**91,295**
65-69		0	0	0	1	5	15	4	1	1	**27**
	$	0	0	0	53,920	63,947	91,895	67,106	141,085	183,171	**86,843**
70-74		0	1	0	0	6	1	0	0	2	**10**
	$	0	47,654	0	0	65,010	51,695	0	0	138,993	**76,739**
75+		0	0	0	0	0	1	0	1	0	**2**
	$	0	0	0	0	0	81,192	0	66,714	0	**73,953**
Total		**1**	**4**	**8**	**53**	**1,196**	**730**	**132**	**26**	**5**	**2,155**
	$	**28,186**	**51,579**	**70,956**	**89,341**	**105,375**	**107,054**	**107,164**	**112,856**	**121,191**	**105,523**

Tier 2 Police and Fire Active Members

		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
<20		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
20-24		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
25-29		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
30-34		0	0	7	1	0	0	0	0	0	**8**
	$	0	0	88,409	82,771	0	0	0	0	0	**87,704**
35-39		1	7	126	155	1	0	0	0	0	**290**
	$	42,411	63,736	96,530	99,541	92,244	0	0	0	0	**97,146**
40-44		0	5	190	950	99	0	0	0	0	**1,244**
	$	0	82,466	96,176	100,403	97,700	0	0	0	0	**99,470**
45-49		0	2	124	916	263	0	0	0	0	**1,305**
	$	0	63,546	91,184	97,794	99,083	0	0	0	0	**97,374**
50-54		0	1	64	541	169	0	0	0	0	**775**
	$	0	4,469	90,674	91,524	98,002	0	0	0	0	**92,754**
55-59		0	3	49	268	80	0	0	0	0	**400**
	$	0	73,497	83,408	85,170	79,927	0	0	0	0	**83,818**
60-64		0	0	25	140	41	0	0	0	0	**206**
	$	0	0	69,400	79,419	79,727	0	0	0	0	**78,265**
65-69		0	1	5	45	8	0	0	0	0	**59**
	$	0	29,216	60,437	76,426	79,490	0	0	0	0	**74,686**
70-74		0	0	2	4	0	0	0	0	0	**6**
	$	0	0	90,942	102,337	0	0	0	0	0	**98,538**
75+		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
Total		**1**	**19**	**592**	**3,020**	**661**	**0**	**0**	**0**	**0**	**4,293**
	$	**42,411**	**65,250**	**92,012**	**95,292**	**94,833**	**0**	**0**	**0**	**0**	**94,624**

All Tier 1/Tier 2 Active Members

		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
<20		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
20-24		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
25-29		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
30-34		1	4	54	23	0	0	0	0	0	**82**
	$	147,981	58,142	60,580	55,225	0	0	0	0	0	**60,025**
35-39		2	63	1,030	799	11	0	0	0	0	**1,905**
	$	29,962	49,514	71,807	73,099	76,660	0	0	0	0	**71,596**
40-44		19	184	1,738	4,707	580	9	0	0	0	**7,237**
	$	66,819	48,658	72,108	79,919	82,173	99,308	0	0	0	**77,419**
45-49		29	185	1,475	5,427	3,373	554	7	0	0	**11,050**
	$	69,686	47,382	70,067	78,373	85,486	87,547	63,360	0	0	**79,344**
50-54		13	138	1,198	4,722	3,369	2,307	356	6	0	**12,109**
	$	78,982	59,259	64,937	71,607	81,577	85,843	81,665	76,519	0	**76,599**
55-59		17	113	1,123	4,622	3,205	2,616	1,136	154	1	**12,987**
	$	74,888	56,012	60,135	63,936	70,803	79,296	84,354	78,043	79,865	**70,296**
60-64		10	80	772	3,448	2,457	1,821	729	302	41	**9,660**
	$	46,073	51,321	60,150	61,525	66,467	75,046	82,228	79,523	70,854	**67,285**
65-69		12	29	255	1,109	694	525	235	101	32	**2,992**
	$	45,326	50,385	62,327	60,650	65,597	77,453	88,086	95,612	87,366	**68,349**
70-74		2	14	56	205	109	88	38	17	23	**552**
	$	16,123	36,170	61,377	59,080	60,316	85,096	78,729	86,814	113,970	**67,462**
75+		2	1	20	46	16	19	11	5	13	**133**
	$	9,600	23,192	35,642	54,022	36,540	78,176	58,398	110,394	84,513	**57,167**
Total		**107**	**811**	**7,721**	**25,108**	**13,814**	**7,939**	**2,512**	**585**	**110**	**58,707**
	$	**64,059**	**51,386**	**67,052**	**71,245**	**76,343**	**80,762**	**83,448**	**82,356**	**86,369**	**73,554**

Age/Service and Prior Year Covered Payroll by Rate Pool

Tier 1/Tier 2 SLGRP Active Members

		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
<20		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
20-24		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
25-29		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
30-34		1	2	32	16	0	0	0	0	0	**51**
	$	147,981	67,726	68,515	61,821	0	0	0	0	0	**67,942**
35-39		1	23	414	497	9	0	0	0	0	**944**
	$	42,411	56,344	72,825	74,724	78,867	0	0	0	0	**73,449**
40-44		2	61	708	2,225	389	6	0	0	0	**3,391**
	$	43,681	61,396	74,908	82,139	84,209	96,854	0	0	0	**80,497**
45-49		3	60	653	2,840	1,756	380	6	0	0	**5,698**
	$	25,762	50,046	77,927	81,816	89,576	89,269	61,151	0	0	**83,873**
50-54		2	65	550	2,459	1,830	1,179	240	5	0	**6,330**
	$	52,343	61,227	74,229	80,259	86,328	89,490	83,095	82,916	0	**83,114**
55-59		8	55	516	2,254	1,633	1,389	607	105	0	**6,567**
	$	27,441	62,111	68,281	75,427	82,239	86,248	87,536	78,180	0	**79,841**
60-64		3	34	401	1,771	1,261	1,057	473	160	29	**5,189**
	$	30,747	56,822	70,095	72,814	79,696	86,136	88,580	83,884	77,269	**78,664**
65-69		5	13	148	623	392	333	170	65	24	**1,773**
	$	43,439	57,608	70,923	69,624	76,504	89,741	96,944	108,324	91,825	**79,209**
70-74		0	10	34	126	71	60	30	8	17	**356**
	$	0	42,337	70,508	68,906	65,733	98,585	90,410	138,389	118,477	**78,423**
75+		2	0	12	34	10	16	8	4	12	**98**
	$	9,600	0	39,588	59,499	42,133	88,724	58,447	132,127	90,034	**65,659**
Total		**27**	**323**	**3,468**	**12,845**	**7,351**	**4,420**	**1,534**	**347**	**82**	**30,397**
	$	**37,329**	**57,831**	**73,183**	**78,135**	**84,154**	**87,800**	**88,007**	**88,535**	**91,941**	**80,833**

Tier 1/Tier 2 School District Active Members

		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
<20		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
20-24		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
25-29		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
30-34		0	2	15	5	0	0	0	0	0	**22**
	$	0	48,559	37,945	26,657	0	0	0	0	0	**36,344**
35-39		1	35	535	205	1	0	0	0	0	**777**
	$	17,513	43,729	68,694	62,624	53,034	0	0	0	0	**65,882**
40-44		7	117	896	2,054	119	1	0	0	0	**3,194**
	$	14,902	39,689	67,607	74,356	66,415	64,726	0	0	0	**70,764**
45-49		13	111	716	2,114	1,308	105	1	0	0	**4,368**
	$	21,264	38,149	61,153	70,952	76,563	72,960	76,619	0	0	**70,094**
50-54		3	54	573	1,853	1,252	958	85	1	0	**4,779**
	$	6,494	36,538	53,782	57,998	71,141	78,609	72,878	44,534	0	**65,054**
55-59		1	41	523	2,069	1,391	1,054	467	39	1	**5,586**
	$	10,172	25,770	49,146	49,730	55,794	68,715	78,475	75,429	79,865	**57,173**
60-64		5	33	314	1,434	1,056	655	203	122	12	**3,834**
	$	15,765	30,609	44,684	45,751	48,909	55,907	65,303	69,352	55,350	**49,915**
65-69		5	9	88	405	252	162	52	31	6	**1,010**
	$	5,335	9,246	43,325	43,572	45,743	52,480	57,376	70,492	75,356	**46,752**
70-74		2	3	16	64	31	21	7	8	3	**155**
	$	16,123	11,786	28,033	38,221	38,068	45,542	33,756	40,445	71,404	**37,889**
75+		0	1	7	9	3	3	3	1	1	**28**
	$	0	23,192	26,895	42,877	16,310	21,922	58,266	23,459	18,259	**33,163**
Total		**37**	**406**	**3,683**	**10,212**	**5,413**	**2,959**	**818**	**202**	**23**	**23,753**
	$	**15,288**	**36,176**	**58,833**	**59,943**	**62,661**	**68,132**	**72,825**	**69,205**	**62,116**	**61,459**

Tier 1/Tier 2 Independent Employers Active Members

		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
<20		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
20-24		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
25-29		0	0	0	0	0	0	0	0	0	**0**
	$	0	0	0	0	0	0	0	0	0	**0**
30-34		0	0	7	2	0	0	0	0	0	**9**
	$	0	0	72,810	73,879	0	0	0	0	0	**73,048**
35-39		0	5	81	97	1	0	0	0	0	**184**
	$	0	58,599	87,166	86,912	80,421	0	0	0	0	**86,219**
40-44		10	6	134	428	72	2	0	0	0	**652**
	$	107,789	94,054	87,406	95,077	97,216	123,962	0	0	0	**94,011**
45-49		13	14	106	473	309	69	0	0	0	**984**
	$	128,245	109,164	81,852	90,870	100,015	100,260	0	0	0	**94,183**
50-54		8	19	75	410	287	170	31	0	0	**1,000**
	$	112,825	117,100	82,029	81,221	96,814	101,321	94,684	0	0	**90,526**
55-59		8	17	84	299	181	173	62	10	0	**834**
	$	130,424	109,214	78,513	75,612	82,963	87,950	97,487	86,803	0	**83,030**
60-64		2	13	57	243	140	109	53	20	0	**637**
	$	144,834	89,511	75,380	72,326	79,743	82,519	90,362	106,678	0	**79,131**
65-69		2	7	19	81	50	30	13	5	2	**209**
	$	150,020	89,862	83,373	77,023	80,143	75,914	95,082	86,086	69,887	**80,588**
70-74		0	1	6	15	7	7	1	1	3	**41**
	$	0	47,654	98,554	65,547	103,905	88,132	43,110	45,156	130,998	**84,090**
75+		0	0	1	3	3	0	0	0	0	**7**
	$	0	0	49,518	25,384	38,126	0	0	0	0	**34,293**
Total		**43**	**82**	**570**	**2,051**	**1,050**	**560**	**160**	**36**	**5**	**4,557**
	$	**122,808**	**101,311**	**82,855**	**84,366**	**92,190**	**91,955**	**94,049**	**96,588**	**106,554**	**88,041**

OPSRP Active General Service Members

		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
<20		122	0	0	0	0	0	0	0	0	**122**
	$	6,588	0	0	0	0	0	0	0	0	**6,588**
20-24		2,355	38	0	0	0	0	0	0	0	**2,393**
	$	18,947	23,695	0	0	0	0	0	0	0	**19,022**
25-29		8,459	1,046	38	0	0	0	0	0	0	**9,543**
	$	33,366	42,679	44,619	0	0	0	0	0	0	**34,431**
30-34		9,069	4,694	1,219	0	0	0	0	0	0	**14,982**
	$	39,349	51,967	54,958	0	0	0	0	0	0	**44,572**
35-39		8,396	5,252	4,846	0	0	0	0	0	0	**18,494**
	$	41,261	56,487	61,982	0	0	0	0	0	0	**51,014**
40-44		6,734	4,466	4,181	0	0	0	0	0	0	**15,381**
	$	41,008	56,812	64,226	0	0	0	0	0	0	**51,908**
45-49		5,716	4,046	4,031	0	0	0	0	0	0	**13,793**
	$	41,169	55,425	60,964	0	0	0	0	0	0	**51,136**
50-54		3,988	3,246	3,680	0	0	0	0	0	0	**10,914**
	$	40,004	51,741	54,873	0	0	0	0	0	0	**48,508**
55-59		3,346	2,760	3,369	0	0	0	0	0	0	**9,475**
	$	38,584	51,079	52,285	0	0	0	0	0	0	**47,095**
60-64		2,217	2,061	2,486	0	0	0	0	0	0	**6,764**
	$	37,711	49,480	51,558	0	0	0	0	0	0	**46,386**
65-69		852	896	930	0	0	0	0	0	0	**2,678**
	$	32,901	44,740	51,214	0	0	0	0	0	0	**43,222**
70-74		276	198	209	0	0	0	0	0	0	**683**
	$	21,320	36,913	42,547	0	0	0	0	0	0	**32,336**
75+		69	58	66	0	0	0	0	0	0	**193**
	$	22,109	31,833	32,894	0	0	0	0	0	0	**28,719**
Total		**51,599**	**28,761**	**25,055**	**0**	**0**	**0**	**0**	**0**	**0**	**105,415**
	$	**37,793**	**52,998**	**57,804**	**0**	**0**	**0**	**0**	**0**	**0**	**46,698**

OPSRP Active Police and Fire Members

		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
<20		1	0	0	0	0	0	0	0	0	**1**
	$	217	0	0	0	0	0	0	0	0	**217**
20-24		276	0	0	0	0	0	0	0	0	**276**
	$	36,022	0	0	0	0	0	0	0	0	**36,022**
25-29		1,230	178	3	0	0	0	0	0	0	**1,411**
	$	53,191	77,114	73,253	0	0	0	0	0	0	**56,251**
30-34		977	744	260	0	0	0	0	0	0	**1,981**
	$	57,259	79,422	85,890	0	0	0	0	0	0	**69,340**
35-39		576	661	757	0	0	0	0	0	0	**1,994**
	$	55,685	80,602	87,160	0	0	0	0	0	0	**75,894**
40-44		340	416	540	0	0	0	0	0	0	**1,296**
	$	54,336	78,633	84,513	0	0	0	0	0	0	**74,709**
45-49		215	288	325	0	0	0	0	0	0	**828**
	$	53,721	73,913	83,528	0	0	0	0	0	0	**72,444**
50-54		162	164	165	0	0	0	0	0	0	**491**
	$	58,611	71,085	78,624	0	0	0	0	0	0	**69,503**
55-59		108	99	125	0	0	0	0	0	0	**332**
	$	53,288	74,681	72,720	0	0	0	0	0	0	**66,983**
60-64		52	61	75	0	0	0	0	0	0	**188**
	$	59,664	73,516	69,069	0	0	0	0	0	0	**67,911**
65-69		11	19	35	0	0	0	0	0	0	**65**
	$	55,314	82,389	67,183	0	0	0	0	0	0	**69,619**
70-74		0	5	7	0	0	0	0	0	0	**12**
	$	0	92,428	50,129	0	0	0	0	0	0	**67,754**
75+		3	1	1	0	0	0	0	0	0	**5**
	$	122,127	54,654	55,238	0	0	0	0	0	0	**95,254**
Total		**3,951**	**2,636**	**2,293**	**0**	**0**	**0**	**0**	**0**	**0**	**8,880**
	$	**53,843**	**78,039**	**83,434**	**0**	**0**	**0**	**0**	**0**	**0**	**68,667**

All OPSRP Active Members

		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
<20		123	0	0	0	0	0	0	0	0	**123**
	$	6,536	0	0	0	0	0	0	0	0	**6,536**
20-24		2,631	38	0	0	0	0	0	0	0	**2,669**
	$	20,738	23,695	0	0	0	0	0	0	0	**20,780**
25-29		9,689	1,224	41	0	0	0	0	0	0	**10,954**
	$	35,883	47,687	46,714	0	0	0	0	0	0	**37,242**
30-34		10,046	5,438	1,479	0	0	0	0	0	0	**16,963**
	$	41,091	55,723	60,396	0	0	0	0	0	0	**47,465**
35-39		8,972	5,913	5,603	0	0	0	0	0	0	**20,488**
	$	42,187	59,183	65,384	0	0	0	0	0	0	**53,436**
40-44		7,074	4,882	4,721	0	0	0	0	0	0	**16,677**
	$	41,648	58,671	66,546	0	0	0	0	0	0	**53,680**
45-49		5,931	4,334	4,356	0	0	0	0	0	0	**14,621**
	$	41,624	56,653	62,647	0	0	0	0	0	0	**52,342**
50-54		4,150	3,410	3,845	0	0	0	0	0	0	**11,405**
	$	40,731	52,671	55,892	0	0	0	0	0	0	**49,412**
55-59		3,454	2,859	3,494	0	0	0	0	0	0	**9,807**
	$	39,044	51,896	53,016	0	0	0	0	0	0	**47,769**
60-64		2,269	2,122	2,561	0	0	0	0	0	0	**6,952**
	$	38,214	50,171	52,070	0	0	0	0	0	0	**46,968**
65-69		863	915	965	0	0	0	0	0	0	**2,743**
	$	33,186	45,522	51,793	0	0	0	0	0	0	**43,847**
70-74		276	203	216	0	0	0	0	0	0	**695**
	$	21,320	38,280	42,793	0	0	0	0	0	0	**32,948**
75+		72	59	67	0	0	0	0	0	0	**198**
	$	26,276	32,219	33,228	0	0	0	0	0	0	**30,399**
Total		**55,550**	**31,397**	**27,348**	**0**	**0**	**0**	**0**	**0**	**0**	**114,295**
	$	**38,935**	**55,100**	**59,953**	**0**	**0**	**0**	**0**	**0**	**0**	**48,405**

Inactive Member Data Exhibits

For the following exhibits, inactive members are counted by lives, not by segments.

Total Tier 1/Tier 2

Inactive Members	Count	Average Deferred Monthly Benefit
<20	0	$0
20-24	0	0
25-29	0	0
30-34	80	290
35-39	804	637
40-44	2,620	1,013
45-49	3,927	1,286
50-54	4,687	1,488
55-59	6,068	1,399
60-64	4,949	1,553
65-69	2,928	1,527
70-74	1,181	1,303
75+	1,110	1,435
Total	**28,354**	**$1,375**

Retirees and Beneficiaries	Count	Average Monthly Benefit
<45	558	$1,145
45-49	376	1,749
50-54	1,226	3,165
55-59	5,605	3,081
60-64	19,618	2,970
65-69	34,148	2,884
70-74	31,279	2,790
75-79	20,887	2,568
80-84	13,189	2,241
85-89	8,109	1,901
90-94	4,392	1,442
95-99	1,292	1,083
100+	188	766
Total	**140,867**	**$2,647**

OPSRP

Inactive Members	Count	Average Deferred Monthly Benefit
<20	0	$0
20-24	15	137
25-29	296	204
30-34	1,798	349
35-39	3,335	440
40-44	2,629	478
45-49	2,363	461
50-54	2,106	437
55-59	1,884	418
60-64	1,379	425
65-69	737	243
70-74	429	111
75+	378	62
Total	**17,349**	**$406**

Retirees and Beneficiaries	Count	Average Monthly Benefit
<45	13	$1,199
45-49	12	1,396
50-54	20	1,785
55-59	248	333
60-64	819	405
65-69	1,864	511
70-74	968	479
75-79	150	401
80-84	20	441
85-89	1	338
90-94	0	0
95-99	0	0
100+	0	0
Total	**4,115**	**$478**

System-Wide Totals

Inactive Members	Count	Average Deferred Monthly Benefit
<20	0	$0
20-24	15	137
25-29	296	204
30-34	1,878	347
35-39	4,139	478
40-44	5,249	745
45-49	6,290	976
50-54	6,793	1,162
55-59	7,952	1,167
60-64	6,328	1,307
65-69	3,665	1,269
70-74	1,610	985
75+	1,488	1,087
Total	**45,703**	**$1,007**

Retirees and Beneficiaries	Count	Average Monthly Benefit
<45	571	$1,146
45-49	388	1,739
50-54	1,246	3,143
55-59	5,853	2,964
60-64	20,437	2,867
65-69	36,012	2,761
70-74	32,247	2,720
75-79	21,037	2,553
80-84	13,209	2,238
85-89	8,110	1,901
90-94	4,392	1,442
95-99	1,292	1,083
100+	188	766
Total	**144,982**	**$2,586**

Retiree Healthcare Member Data Exhibits

For the following exhibits, inactive members are counted by lives, not by pool or employer segments.

RHIA Members

	As of December 31, 2017	As of December 31, 2016
Dormant members		
Number	13,535	14,705
Average Age	54.5	54.6
Retired members under age 65 eligible for deferred RHIA benefits		
Number	24,568	24,859
Average Age	60.3	60.3
Retired members receiving RHIA benefits		
Number	46,656	47,115
Average Age	76.0	75.8

RHIPA Members

	As of December 31, 2017	As of December 31, 2016
Active Tier 1/Tier 2 employees of RHIPA employers		
Number	15,785	17,713
Average Age	53.9	53.7
Average Service	20.8	20.3
Retired members receiving RHIPA benefits		
Number	1,082	1,167
Average Age	61.6	61.7
Average Monthly Subsidy Amount	355	318

Actuarial Methods and Assumptions

Tier 1/Tier 2 (including Retiree Healthcare)

Actuarial Methods and Valuation Procedures

In July 2017 the Board adopted the following actuarial methods and valuation procedures for the December 31, 2016 and 2017 actuarial valuations of PERS Tier 1/Tier 2 benefits.

Actuarial cost method	**Entry Age Normal.** Under the Entry Age Normal (EAN) cost method, each active member's **entry age present value of projected benefits** is allocated over the member's service from the member's date of entry until their assumed date of exit, taking into consideration expected future compensation increases. Thus, the total pension to which each member is expected to become entitled at retirement is broken down into units, each associated with a year of past or projected future credited service. Typically, when this method is introduced, there will be an initial liability for benefits credited for service prior to that date, and to the extent that the liability is not covered by assets of the plan, there is an unfunded accrued liability to be funded over a stipulated period in accordance with an amortization schedule. A detailed description of the calculation follows: • An individual member's **entry age present value of projected benefits** is the sum of the present value of the benefit described under the plan at each possible separation date, determined at the member's entry age using the projected compensation and service at each separation date. • An individual member's **entry age present value of projected salaries** is the sum of the present value of the projected compensation over the member's working career associated with each possible future separation date, determined at the member's entry age. • An individual member's **present value of projected benefits** is the sum of the present value of the benefit described under the plan at each possible separation date, determined at the valuation date using the projected compensation and service at each separation date. • An individual member's **normal cost** for a certain year is the member's **entry age present value of projected benefits** divided by the member's **entry age present value of projected salaries** and multiplied by the member's projected compensation for the year following the valuation date. • An individual member's **actuarial accrued liability** is the member's **present value of projected benefits** less the sum of the present value of the member's **normal costs** for each future year, determined at the valuation date using the projected compensation and service at each future year. – The plan's **normal cost** is the sum of the individual member normal costs, and the plan's **actuarial accrued liability** is the sum of the individual member accrued liabilities.
Tier 1/Tier 2 UAL amortization	The Tier 1/Tier 2 UAL amortization period was reset to 20 years as of December 31, 2013. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll (Tier 1/ Tier 2 plus OPSRP payroll) over a closed 20 year period from the valuation in which they are first recognized.

Retiree Healthcare UAL amortization	The UAL for Retiree Health Care as of December 31, 2007 is amortized as a level percentage of projected combined valuation payroll (Tier 1/ Tier 2 plus OPSRP payroll) over a closed 10 year period. Gains and losses between subsequent odd-year valuations are amortized as a level percentage of combined valuation payroll over a closed 10 year period from the valuation in which they are first recognized.
Asset valuation method	The actuarial value of assets equals the market value of assets, excluding the Contingency and Capital Preservation Reserves, and the Rate Guarantee Reserve when it is in positive surplus status. Market values are reported to Milliman by PERS. It is our understanding that select real estate and private equity investments are reported on a three-month lag basis. This valuation report does not attempt to quantify any effects of the reporting lag.
Contribution rate stabilization method	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts rate pool, OPSRP) are confined to a collared range based on the prior contribution rate (prior to application of side accounts, pre-SLGRP liabilities, and 6 percent Independent Employer minimum). The new contribution rate will generally not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the prior contribution rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funded 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.
Allocation of Liability for Service Segments	For active Tier 1/Tier 2 members who have worked for multiple PERS employers over their career, the calculated actuarial accrued liability is allocated among the employers based on a weighted average of the Money Match methodology, which uses account balance, and the Full Formula methodology, which uses service. The allocation is 15% (0% for police & fire) based on account balance with each employer and 85% (100% for police & fire) based on service with each employer. The entire normal cost is allocated to the current employer.
Allocation of Benefits-In-Force (BIF) Reserve	The BIF reserve is allocated to each rate pool in proportion to the retiree liability attributable to the rate pool.

Economic Assumptions

The Board adopted the following economic assumptions for the December 31, 2016 and 2017 actuarial valuations. All assumptions were reviewed and adopted in conjunction with the 2016 Experience Study, published in July 2017. The assumption selection process and rationale is described in detail in that report.

Investment return	7.20% compounded annually
Pre-2014 Interest crediting	8.00% compounded annually on members' regular account balances 8.25% compounded annually on members' variable account balances
Post-2013 Interest crediting	7.20% compounded annually on members' regular account balances 7.20% compounded annually on members' variable account balances
Inflation	2.50% compounded annually
Administrative expenses	$37.5 million per year is added to the normal cost.
Payroll growth	3.50% compounded annually. This assumption represents the sum of the inflation assumption and a real wage growth assumption of 100 basis points.
Healthcare cost trend	Healthcare cost trend rates are used to estimate increases in the RHIPA Maximum Subsidy. These rates include consideration of the excise tax scheduled to be introduced in 2020 by the Affordable Care Act.

Year[1]	Rate	Year	Rate
2018	6.5%	2053 – 2058	5.3%
2019	5.9	2059 – 2063	5.2
2020	5.4	2064	5.1
2021 – 2023	5.3	2065	5.0
2024 – 2025	5.2	2066	4.9
2026 – 2027	5.3	2067 – 2068	4.8
2028	5.4	2069	4.7
2029 – 2032	6.2	2070	4.6
2033 – 2039	6.1	2071	4.5
2040	6.0	2072 – 2073	4.4
2041	5.8	2074 – 2090	4.3
2042 – 2043	5.7	2091	4.2
2044 – 2045	5.6	2092	4.3
2046 – 2048	5.5	2093+	4.2
2049 – 2052	5.4		

[1] *For valuation purposes, the health cost trend rates are assumed to be applied at the beginning of the plan year.*

Demographic Assumptions

The Board adopted the following demographic assumptions for the December 31, 2016 and 2017 actuarial valuations. All assumptions were reviewed and adopted in conjunction with the 2016 Experience Study, published in July 2017. The study relied on data from an observation period of January 1, 2013 to December 31, 2016, with the exception of the merit scale assumption, which relied on data from 2008 through 2016. Assumptions selected from the study represent an estimate of future experience based on relevant recent experience and reasonable expectations about the future.

Mortality

Healthy Retired Members

The following healthy retired mortality tables were first adopted in the December 31 valuation of the years shown.

Basic Table	RP 2014 Healthy Annuitant, Sex Distinct, Generational Projection with Unisex Social Security Data Scale	Valuation Year Adopted
School District male	White collar, set back 12 months	2016
Other General Service male*	Blended 50% blue collar / 50% white collar, set back 12 months	2016
Police & Fire male	Blended 50% blue collar / 50% white collar, set back 12 months	2016
School District female	White collar, set back 12 months	2016
Other female**	Blended 50% blue collar / 50% white collar, no set back	2016

** including male beneficiaries of members of all classes*
*** including female beneficiaries of members of all classes*

Disabled Retired Members

The following disabled retiree mortality rates were first adopted for the December 31, 2016 actuarial valuation.

Basic Table	RP 2014 Disabled Retiree, Sex Distinct, Generational Projection with Unisex Social Security Data Scale
Male	No collar adjustment or set back
Female	No collar adjustment or set back

Non-Annuitant Members

Mortality for non-annuitant members is assumed to follow the RP-2014 Employee table, sex distinct, with generational projection using a unisex Social Security data scale, and the same collar and set back adjustments for each group as described above for Healthy Retired members.

This assumption was first adopted for the December 31, 2016 actuarial valuation.

Retirement Assumptions

The retirement assumptions used in the actuarial valuation include the following:

- Retirement from active status/dormant status
- Probability a member will elect a lump sum option at retirement
- Percentage of members who elect to purchase credited service at retirement.

Rates of Retirement from Active Status

The following retirement rate assumptions were first adopted in the December 31, 2016 valuation.

	Police & Fire			General Service			School Districts			
Age	< 13 yrs	13-24 yrs	25+ yrs	< 15 yrs	15-29 yrs	30+ yrs	< 15 yrs	15-29 yrs	30+ yrs	Judges
Less than 50						15.00%			25.00%	
50	1.50%	2.00%	24.00%			15.00%			25.00%	
51	1.50%	2.00%	17.50%			15.00%			25.00%	
52	1.50%	2.00%	17.50%			15.00%			25.00%	
53	1.50%	2.00%	17.50%			15.00%			25.00%	
54	1.50%	3.50%	17.50%			15.00%			25.00%	
55	3.00%	10.00%	23.50%	1.50%	3.00%	15.00%	1.50%	4.00%	25.00%	
56	3.00%	8.00%	23.50%	1.50%	3.00%	15.00%	1.50%	4.00%	25.00%	
57	3.00%	8.00%	23.50%	1.50%	3.00%	15.00%	1.50%	4.00%	25.00%	
58	6.00%	8.00%	23.50%	1.50%	10.00%	20.00%	1.50%	12.50%	28.50%	
59	6.00%	8.00%	23.50%	3.50%	10.00%	20.00%	4.50%	12.50%	28.50%	
60	6.00%	11.00%	23.50%	6.00%	10.00%	20.00%	6.50%	12.50%	28.50%	6.00%
61	6.00%	14.00%	23.50%	6.00%	10.00%	20.00%	6.50%	12.50%	28.50%	6.00%
62	15.00%	25.00%	38.00%	13.00%	19.50%	31.00%	15.00%	25.00%	34.00%	6.00%
63	15.00%	17.00%	38.00%	11.50%	16.50%	22.00%	13.00%	19.50%	26.50%	6.00%
64	15.00%	17.00%	17.00%	12.50%	16.50%	22.00%	13.00%	19.50%	31.50%	6.00%
65	100.00%	100.00%	100.00%	19.50%	28.00%	32.00%	25.50%	33.50%	42.00%	6.00%
66				27.50%	35.00%	38.00%	23.00%	36.50%	42.00%	6.00%
67				22.50%	25.00%	26.00%	21.00%	34.50%	42.00%	10.00%
68				19.50%	25.00%	26.00%	21.00%	28.00%	28.50%	10.00%
69				19.50%	25.00%	26.00%	21.00%	28.00%	28.50%	10.00%
70				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Retirement from Dormant Status

Dormant members are assumed to retire at Normal Retirement Age (age 58 for Tier 1, age 60 for Tier 2, age 60 for Judges, and age 55 for Police & Fire) or at the first unreduced retirement age (30 years of service, or age 50 with 25 years of service for Police & Fire).

Lump Sum Option at Retirement

Members retiring may elect to receive a full or partial lump sum at retirement. The probability that a retiring member will elect a lump sum at retirement is summarized in the table below. These rates were first adopted effective December 31, 2016.

Lump Sum Option at Retirement	
Partial Lump Sum:	3.5% for all years
Total Lump Sum:	1.5% for 2018, declining by 0.5% per year until reaching 0.0%
No Lump Sum:	95.0% in 2018, increasing by 0.5% per year until reaching 96.5%

Purchase of Credited Service at Retirement

The following percentages of members are assumed to purchase credit for the six-month waiting period at retirement. These rates were first adopted effective December 31, 2016.

Purchase of Credited Service at Retirement	
Money Match Retirements:	0%
Non-Money Match Retirements:	65%

Judge Member Plan Election

All judge members are assumed to elect to retire under the provisions of Plan B.

Disability Assumptions

There are two disability assumptions used in the valuation - duty disability and ordinary disability. Duty disability rates are separated between Police & Fire and General Service, while ordinary disability is the same for all members. The rates for duty disability for General Service were first adopted effective December 31, 2014. The rates for duty disability for Police & Fire were first adopted effective December 31, 2012. The rates for ordinary disability were first adopted effective December 31, 2016.

	Percentage of the 1985 Disability Class 1 Rates
Duty Disability Police & Fire	20%
Duty Disability General Service	0.9%
Ordinary Disability	35% with 0.18% cap

Termination Assumptions

The termination assumptions were first adopted effective December 31, 2016, except for the Police & Fire and General Service females which were adopted effective December 31, 2014.

Termination Rates

Sample termination rates are shown for each group below:

Duration from Hire Date	School District Male	School District Female	General Service Male	General Service Female	Police & Fire
0	16.63%	13.50%	17.00%	18.50%	10.00%
1	14.25%	12.50%	15.33%	17.00%	5.97%
5	6.86%	7.13%	7.74%	9.29%	3.31%
10	3.31%	3.85%	4.15%	5.24%	2.23%
15	2.30%	2.68%	2.86%	3.66%	1.50%
20	1.62%	1.95%	2.07%	2.63%	1.01%
25	1.20%	1.50%	1.49%	1.89%	0.80%
30+	1.20%	1.50%	1.40%	1.50%	0.80%

For a complete table of rates, please refer to the 2016 Experience Study report for the System, published in July 2017.

Oregon Residency Post-Retirement

For purposes of determining eligibility for SB 656/HB 3349 benefit adjustments, 85% of retirees are assumed to remain Oregon residents after retirement.

Salary Increase Assumptions

The salary increase assumptions reflected in the actuarial valuation include:

- Merit scale increases in addition to the payroll growth increase
- Unused Sick Leave adjustments
- Vacation Pay adjustments

Merit Increases

Merit increases are based on duration of service for the following groups with sample rates shown in the following table. These rates were first adopted effective December 31, 2016, except for the school district assumption, which was adopted December 31, 2014.

Duration	School District	Other General Service	Police & Fire
0	3.53%	3.38%	4.44%
1	3.20%	3.05%	3.95%
5	2.01%	1.94%	2.39%
10	0.82%	0.99%	1.23%
15	-0.07%	0.43%	0.69%
20	-0.67%	0.14%	0.52%
25	-0.91%	0.02%	0.44%
30+	-0.94%	-0.04%	0.21%

The assumed merit increase for active judge members is 0.0%.

For a complete table of rates, please refer to the 2016 Experience Study for the System, published in July 2017.

Unused Sick Leave

Members covered by the provision allowing unused sick leave to be used to increase final average salary are assumed to receive increases in their final average salary in accordance with the table below. This adjustment is not applied to disability benefits. Effective dates for the current assumption are shown in the table.

Unused Sick Leave		Valuation year adopted
Actives		
• State General Service Male	6.25%	2010
• State General Service Female	3.75%	2010
• School District Male	7.50%	2016
• School District Female	5.75%	2012
• Local General Service Male	4.75%	2012
• Local General Service Female	3.25%	2014
• State Police & Fire	4.75%	2012
• Local Police & Fire	7.25%	2016
Dormant Members	3.25%	2016

Vacation Pay

Members eligible to receive a lump sum payment of unused vacation pay are assumed to receive increases in their final average salary in accordance with the table below. This adjustment is not applied to disability benefits. These rates were adopted December 31, 2016, except the school district rates which were adopted effective December 31, 2012.

Vacation Pay	
Tier 1	
• State General Service	2.00%
• School District	0.25%
• Local General Service	2.75%
• State Police & Fire	2.50%
• Local Police & Fire	3.75%
Tier 2	0.00%

Retiree Healthcare Participation

The following percentages of eligible retiring members are assumed to elect RHIPA and RHIA coverage:

Retiree Healthcare Participation	
RHIPA	
• 8 – 9 years of service	10.0%
• 10 – 14 years of service	10.0%
• 15 – 19 years of service	18.0%
• 20 – 24 years of service	23.0%
• 25 – 29 years of service	29.0%
• 30+ years of service	38.0%
RHIA	
• Healthy Retired	35.0%
• Disabled Retired	20.0%

The RHIA disabled retired rate was first adopted December 31, 2008. The RHIA healthy retired rate and RHIPA rates for 20 to 24 years of service were adopted December 31, 2016. RHIPA Rates up through 14 years of service were first adopted effective December 31, 2012. All other RHIPA rates were first adopted effective December 31, 2014.

OPSRP

Most of the methods and assumptions adopted for the OPSRP valuation are the same as those used for Tier 1/Tier 2. The methods and assumptions that differ for OPSRP are summarized below. The Board adopted the following methods, procedures and assumptions for the December 31, 2016 and December 31, 2017 actuarial valuations.

Actuarial Methods and Valuation Procedures

OPSRP UAL amortization	The UAL as of December 31, 2007 is amortized as a level percentage of projected combined valuation payroll (Tier 1/ Tier 2 plus OPSRP payroll) over a closed period 16 year period. Gains and losses between subsequent odd-year valuations are amortized as a level percentage of combined valuation payroll over 16 years from the valuation in which they are first recognized.

Economic Assumptions

Administrative expenses	$6.5 million per year is added to the normal cost.

Demographic Assumptions

Retirement Assumptions

Rates of Retirement from Active Status

	Police & Fire			General Service			School Districts		
Age	< 13 yrs	13-24 yrs	25+ yrs	< 15 yrs	15-29 yrs	30+ yrs	< 15 yrs	15-29 yrs	30+ yrs
50	0.50%	1.50%	5.50%						
51	0.50%	1.50%	5.50%						
52	0.50%	1.50%	5.50%						
53	0.50%	1.50%	25.00%						
54	0.50%	1.50%	17.50%						
55	2.00%	5.00%	23.50%	1.00%	2.50%	5.00%	1.00%	2.50%	5.00%
56	2.00%	5.00%	23.50%	1.00%	2.50%	5.00%	1.00%	2.50%	5.00%
57	2.00%	5.00%	23.50%	1.00%	2.50%	7.50%	1.00%	2.50%	7.50%
58	4.00%	5.00%	23.50%	1.50%	3.00%	30.00%	1.50%	3.00%	30.00%
59	4.00%	5.00%	23.50%	2.00%	3.00%	25.00%	1.50%	3.00%	25.00%
60	4.00%	15.00%	23.50%	3.00%	3.75%	20.00%	2.50%	3.75%	20.00%
61	4.00%	8.50%	23.50%	3.00%	5.00%	20.00%	3.00%	5.00%	20.00%
62	10.00%	25.00%	38.00%	8.00%	12.00%	30.00%	6.00%	12.00%	30.00%
63	7.00%	17.00%	38.00%	7.00%	10.00%	20.00%	6.00%	10.00%	20.00%
64	7.00%	17.00%	17.00%	7.00%	10.00%	20.00%	6.00%	10.00%	20.00%
65	100.00%	100.00%	100.00%	13.00%	35.00%	20.00%	11.50%	35.00%	20.00%
66				15.50%	33.00%	20.00%	12.50%	33.00%	20.00%
67				15.50%	22.00%	30.00%	11.00%	22.00%	30.00%
68				13.00%	17.00%	20.00%	9.00%	17.00%	20.00%
69				13.00%	17.00%	20.00%	9.00%	17.00%	20.00%
70				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Retirement from Dormant Status

Dormant members are assumed to retire at their Normal Retirement Age.

Changes in Actuarial Methods and Assumptions — Tier 1/Tier 2 and OPSRP

A summary of key changes implemented since the December 31, 2016 valuation are described briefly below.

Changes in Actuarial Methods and Allocation Procedures

There were no changes to actuarial methods and procedures since the December 31, 2016 valuation.

Changes in Economic Assumptions

There were no changes to economic assumptions since the December 31, 2016 valuation.

Changes in Demographic Assumptions

There were no changes to demographic assumptions since the December 31, 2016 valuation.

Summary of Plan Provisions

Summary of Plan Provisions

The following section summarizes the plan provisions considered in the actuarial valuation. A more detailed description of plan provisions is available from PERS.

Membership	All employees of public employers participating in this System who are in qualifying positions become members of the System after completing six months of service except those who are eligible for and have elected to participate in an optional retirement plan. Different benefit provisions of the plan apply based on date of hire.	
	Tier 1	Hired prior to 1996
	Tier 2	Hired after 1995 and before August 29, 2003
	OPSRP	Hired after August 28, 2003, and neither a judge nor a former Tier 1/Tier 2 member eligible to reestablish Tier 1/Tier 2 membership
	Judges	Members of the State Judiciary
Member Contributions	**Judges**	7% of salary
	All others	None
Employer Contributions	Set by the PERS Board based on actuarial calculations that follow Board rate-setting policies for employers.	

Summary of Chapter 238 Provisions — Tier 1/Tier 2 and Judges

Normal Retirement Date	**Police and Fire**	Age 55
	Judges	Age 65
	Tier 1 General Service	Age 58
	Tier 2 General Service	Age 60

Normal Retirement Allowance

For Members who are not Judges, the greatest of the Full Formula benefit, the Money Match benefit, or the Formula Plus Annuity benefit (only available to Members who made contributions before August 21, 1981). For Members with 15 or more years of creditable service, the benefit will not be less than the minimum service retirement allowance of $100 per month, as described in ORS 238.310.

Full Formula The percentage multiplier from the table below multiplied by final average salary and years of creditable service plus a prior service pension, if applicable.

Percentage Multiplier	Membership Classification
2.00%	Fire, Police and Legislators
1.67%	All other members

Money Match The Member's account balance and a matching employer amount converted to an actuarially equivalent annuity.

Formula Plus Annuity The Member's account balance converted to an actuarially equivalent cash refund annuity plus the percentage multiplier from the table below multiplied by final average salary and years of creditable service, plus a prior service pension, if applicable.

Percentage Multiplier	Membership Classification
1.35%	Fire, Police and Legislators
1.00%	All other members

Normal Retirement Allowance (continued)

Judges

Final average salary multiplied by the first percentage multiplier from the table below for up to 16 years of service plus the second percentage multiplier for any service in excess of 16 years, but not to exceed the maximum percentage of final average salary also shown below. Judges must elect Plan A or Plan B no later than age 60. A "Plan B" judge must serve as a pro tem judge for a total of 175 days postretirement.

Plan	Percentage Factor (up to 16 years)	Percentage Factor (after 16 years)	Maximum Percentage of Final Average Salary
A	2.8125%	1.67%	65%
B	3.75%	2.00%	75%

Final Average Salary

The greater of:

- Average salary earned during the three calendar years in which the member was paid the highest salary, even if one of those years is less than a full calendar year.
- Total salary earned over the last 36 months of employment divided by the actual months of service during that 36 month period.

Covered salary for this purpose includes the value of member contributions assumed and paid by employers, any payment due to an employer's participation in the Unused Sick Leave program, and, for Tier 1 members, lump sum payment of unused vacation time.

Creditable Service

The number of years and months an active Member is paid a salary by a participating PERS employer and PERS benefits are being funded.

Prior Service Pension

Benefits payable on account of Prior Service Credit for a member's service with a participating employer prior to the employer's participation in PERS, as described in ORS 238.442.

SB 656/HB 3349 Adjustment

All members receive an increase to their monthly retirement benefit equal to the greater of the increase under Senate Bill 656 (SB 656) or House Bill 3349 (HB 3349). The adjustment for SB 656 only applies to members who established membership prior to July 14, 1995. Senate Bill 822, enacted in 2013, limits eligibility for these adjustments to only PERS beneficiaries who pay Oregon state income tax.

SB 656 Increase

Years of Service	General Service	Police & Fire
0-9	0.0%	0.0%
10-14	1.0	1.0
15-19	1.0	1.0
20-24	2.0	2.5
25-29	3.0	4.0
30 & Over	4.0	4.0

HB 3349 Increase

$$\left(\frac{1}{\text{1 – maximum Oregon personal income tax rate (limited to 9\%)}} - 1\right) \times \frac{\text{Service prior to October 1, 1991}}{\text{All Service}}$$

Early Retirement Eligibility	**Police and Fire**	Age 50 or 30 years of service
	Judges	Age 60
	General Service	Age 55 or 30 years of service
Early Retirement Allowance	Normal retirement allowance, actuarially reduced to early retirement age. However, there is no reduction applied if a member has completed 30 years of service (25 years for police & fire members) or for judges in Plan B.	
Vesting	Contributions made in any part of five calendar years or attainment of age 50 (45 for police & fire) while working in a qualifying position.	
Termination Benefits	**Non-Vested**	Payment of member's account balance.
	Vested	Same as normal (or early) retirement allowance, but commencement is deferred to normal (or early) retirement date.
Optional Forms of Retirement Allowance	The normal form of benefit is a cash refund annuity (joint and two-thirds survivor contingent annuity for a married judge). All optional amounts are adjusted to be actuarially equivalent. **Options Available** • Life annuity • Cash refund annuity • Life annuity guaranteed 15 years • Joint and 50% or 100% survivor contingent annuity, with or without pop-up feature • Partial Lump Sum: Refund of member contribution account balance plus a pension (under any optional form) of employer-paid portion of the Full Formula or Money Match annuity. • Total Lump Sum: Refund of member contribution account plus a matching employer amount.	
Preretirement Death Benefit Eligibility	**Judges**	Six or more years of service.
	All others	Death occurring while the member is an employee of a participating employer or within 120 days of termination provided the employee does not withdraw the account balance or retire, or a result of injuries received while in the service of a participating employer.
Preretirement Death Benefit	**Judges**	The spouse shall receive a life pension equal to two-thirds of the service retirement allowance. The beneficiary of an unmarried judge shall receive the member's accumulated contributions with interest.
	All others	The member's account balance plus a matching employer amount.
Additional Police & Fire Death Benefits	Upon the death of a retired police officer or firefighter, the surviving spouse or dependent children under age 18 will receive a monthly benefit based on 25% of the cash refund retirement allowance due to police and fire service.	
Disability Benefit Eligibility	**Duty**	Disablement occurring as a direct result of a job-related injury or illness, regardless of length of service.
	Non-Duty	Disablement occurring after ten years of service (six years, if a judge), but prior to normal retirement eligibility.

Disability Benefits	The normal retirement allowance calculated based on the service credit that would have been earned if the member had continued working to age 58 (age 55 for police and fire, age 65 for judge members) payable commencing immediately. **Fire and Police Members' Alternative** In lieu of the above, firefighters and police officers who qualify for duty disability may elect to receive a benefit of 50% of final average monthly salary at the time of disablement. **Minimum Monthly Retirement Allowance** Judges .... 45% of final average monthly salary. All others .... $100 for a member with at least 15 years of creditable service, actuarially reduced if an optional form of benefit is chosen. **Reduction of Benefits** Whenever a disabled employee's disability benefit and earned income for any month exceed the monthly salary received at the time of disablement or $400, if greater, the disability benefit will be reduced by the excess. For Tier Two members, the disability benefit may not exceed the member's salary at the time of disablement.
Waiting Time Service Purchases	Members with at least 10 years of combined credited and/or prior service under PERS may elect to purchase service credit for the six-month "waiting time" period worked prior to establishing membership in the system. The waiting time purchase is interest-free and must be purchased in one payment prior to retirement.
Police & Fire Unit Purchases	Police & fire members may purchase 60-month annuity benefits (up to $80 per month) that must be paid out by age 65 and cannot commence prior to the earliest retirement age. The amount purchased by the member is matched by the employer. In certain situations, such as termination of employment prior to retiring, or working beyond age 65, the employer's matching purchase is forfeited.
Automatic Postretirement Cost of Living Adjustments (COLAs)	All monthly pension and annuity benefits except unit purchases are eligible for postretirement adjustments. As a result of the Senate Bills 822 and 861 and the Oregon Supreme Court decision in *Moro v. State of Oregon*, automatic postretirement adjustments are based on a blended COLA as described below. **Automatic COLA prior to SB 822 and SB 861**: Benefits were adjusted annually to reflect the increase or decrease in the Consumer Price Index (Portland area - all items) as published by the Bureau of Labor Statistics. The maximum adjustment to be made for any year was 2% of the previous year's benefit. Any CPI change in excess of the limit was accumulated for future benefit adjustments which would otherwise be less than the limit. No benefit was decreased below its original amount. **Automatic Adjustments Provided by Senate Bills 822 and 861**: This legislation, passed in 2013, provided for that benefits would be increased annually based on a marginal rate schedule. The increase is calculated as 1.25% on the first $60,000 of annual benefit and 0.15% on amounts above $60,000 of annual benefit.

	Blended COLA after *Moro* decision	The Supreme Court decision in *Moro* requires that members "will be entitled to receive during retirement a blended COLA rate that reflects the different COLA provisions applicable to benefits earned at different times." The Supreme Court did not articulate a specific methodology for determining the blended COLA. For purposes of this valuation, we have determined the blend based on creditable service earned before and after October 2013. This approach is consistent with OAR 459-005-0510 adopted by the PERS Board in September 2015.
Ad Hoc Adjustments	From time to time, as granted by the Legislature, retired members and beneficiaries have received increases in their monthly benefits.	
Variable Annuity Program	**Contributions**	Prior to January 1, 2004, a member could elect to have 25, 50 or 75 percent of his or her contributions invested in the variable account.
	Benefit	At retirement, a member may elect to receive a variable annuity with the funds accumulated in his or her variable account. Alternatively, a member may elect to have all or a portion of the funds in his or her variable account transferred back to the regular account and receive an annuity from the System as though no variable annuity program existed. The employer-provided benefit, however, is based on the earnings the member would have received in the regular account.
Interest Credit on Member Accounts	**Tier 1 Regular**	Actuarially assumed rate of return until the rate guarantee reserve has been fully funded for three consecutive years and the Board elects to credit additional interest.
	Tier 2 Regular	Amount determined by the Board based on actual investment earnings of the regular account.
	Variable	Actual earnings in variable account.
Retiree Healthcare – Medicare Supplement (RHIA)	**Retiree Eligibility**	All of the following must be met: (a) Currently receiving a retirement allowance from the System, (b) Covered for eight years before retirement, (c) Enrolled in a PERS-sponsored health plan, and (d) Enrolled in both Medicare Part A and Part B.
	Surviving Spouse or Dependent Eligibility	A surviving spouse or dependent of a deceased RHIA-eligible retiree is eligible for RHIA benefits if they are enrolled in both Medicare Part A and Part B, and *either* of the following criteria are met: (a) Currently receiving a retirement allowance from the System, or (b) The surviving spouse or dependent was covered under the eligible retiree's PERS-sponsored health insurance at the time of the retiree's death and the deceased retiree retired before May 1, 1991.

	Benefit Amount	A monthly contribution of up to $60 per retiree is applied to PERS-sponsored Medicare supplemental insurance costs.
Retiree Healthcare – Under Age 65 (RHIPA)	**Retiree Eligibility**	Retired PERS members who were state employees at the time of retirement, are enrolled in a PERS-sponsored health plan, and are not eligible for Medicare.
	Surviving Spouse or Dependent Eligibility	A surviving spouse or dependent of a deceased RHIPA-eligible retiree is eligible for RHIPA benefits if they are not yet eligible for Medicare, and *either* of the following criteria are met: (a) Currently receiving a retirement allowance from the System, or (b) The surviving spouse or dependent was covered under the eligible retiree's PERS-sponsored health plan at the time of the retiree's death and the deceased retiree retired on or after September 29, 1991.
	Benefit	A percentage (as shown in the table below) of the maximum monthly subsidy based on years of service. The maximum monthly subsidy is calculated annually as the average difference between the health insurance premiums paid by active state employees and the premium retirees would pay if they were rated separately from active state employees. The maximum monthly subsidy for 2018 is $385.35 per month.

Years of Service with State Employer	Subsidized Amount
Under 8	0%
8-9	50%
10-14	60%
15-19	70%
20-24	80%
25-29	90%
30 & Over	100%

Changes in Plan Provisions	There were no changes in the Tier 1/Tier 2 benefit provisions reflected since the December 31, 2016 actuarial valuation.

Summary of Chapter 238A Provisions — OPSRP

Normal Retirement Date	**Police & Fire**	Age 60 or age 53 with 25 years of retirement credit
	General Service	Age 65 or age 58 with 30 years of retirement credit
	School Districts	Age 65 or age 58 with 30 calendar years of active membership
Normal Retirement Allowance	A single life annuity equal to final average salary times years of retirement credit attributable to service as fire and police times 1.8% plus final average salary times all other years of retirement credit times 1.5%	
Final Average Salary	The greater of: • Average salary earned during the three calendar years in which the member was paid the highest salary, even if one of those years is less than a full calendar year. • Total salary earned over the last 36 months of employment divided by the actual months of service during that 36 month period. Covered salary for this purpose includes base pay, plus overtime up to an average amount, plus bonuses, plus member contributions paid by the employer on a salary reduction basis. Excludes payments of unused vacation or accumulated sick leave at retirement, and member contributions "assumed and paid" by the employer.	
Early Retirement Eligibility	**Police & Fire**	Age 50 and 5 years of vesting service
	General Service	Age 55 and 5 years of vesting service
Early Retirement Allowance	Normal retirement allowance, actuarially reduced to early retirement age.	
Vesting	Five years or attainment of normal retirement age.	
Vested Termination Benefit	Same as normal (or early) retirement allowance, but commencement is deferred to normal (or early) retirement date.	
Optional Forms of Retirement Benefit	The normal form of benefit is a life annuity. All optional amounts are adjusted to be actuarially equivalent. **Options Available** • Life annuity • Joint and 50% or 100% survivor contingent benefit, with or without pop-up feature • Lump sum if monthly normal retirement benefit is less than $200 or if lump sum value is less than $5,000.	
Preretirement Death Benefit Eligibility	Death of a vested member before retirement benefits begin.	
Preretirement Death Benefit	If member was eligible for early retirement, the actuarial equivalent of 50% of the early retirement benefit the participant was eligible to receive at date of death. If member was not eligible for early retirement, the actuarial equivalent of 50% of the early retirement benefit the participant would have been eligible to receive if he terminated employment on his date of death and retired at the earliest possible date.	

Disability Benefit Eligibility	**Duty**	Disablement occurring as a direct result of a job-related injury or illness, regardless of length of service.
	Non-Duty	Disablement occurring after ten years of service, but prior to normal retirement eligibility.
Disability Benefit Amounts	**Preretirement Benefit**	45% of salary during last full month of employment before disability, reduced if the total benefit exceeds 75% of salary. Benefit is payable monthly until normal retirement age.
	Retirement Benefit	Same formula as Normal Retirement Benefit, except: Final average salary is adjusted to reflect cost-of-living increases from date of disability to normal retirement age, and Retirement credits continue to accrue from date of disability to normal retirement age.
Postretirement Adjustments	All monthly pension and annuity benefits except unit purchases are eligible for postretirement adjustments. As a result of the Senate Bills 822 and 861 and the Oregon Supreme Court decision in *Moro v. State of Oregon*, automatic postretirement adjustments are based on a blended COLA as described below.	
	Automatic COLA prior to SB 822 and SB 861	Benefits were adjusted annually to reflect the increase or decrease in the Consumer Price Index (Portland area - all items) as published by the Bureau of Labor Statistics. The maximum adjustment to be made for any year was 2% of the previous year's benefit. Any CPI change in excess of the limit was accumulated for future benefit adjustments which would otherwise be less than the limit. No benefit was decreased below its original amount.
	Automatic Adjustments Provided by Senate Bills 822 and 861	This legislation, passed in 2013, provided for that benefits would be increased annually based on a marginal rate schedule. The increase is calculated as 1.25% on the first $60,000 of annual benefit and 0.15% on amounts above $60,000 of annual benefit.
Changes in Plan Provisions	There were no changes in the OPSRP benefit provisions reflected since the December 31, 2016 actuarial valuation.	

Glossary

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 accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded 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 Tier 1, Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

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

Fundamental Cost Equation. An expression of the long-term cost of a pension plan, which states that:

Benefits + Expenses = Contributions + Investment Earnings

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.

Pre-SLGRP Liability/(Surplus). The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

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

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

Present Value of Future Normal Cost (PVFNC). The present value (as of the valuation date) of all future annual normal costs for current members expected to be allocated to future years in accordance with the actuarial cost method in use. By definition, this is equal to the difference between the total actuarial present value of benefits less the actuarial accrued liability under the actuarial cost method.

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. 67 of the Governmental Accounting Standards Board (GASB 67). The accounting standard establishing financial reporting standards for defined benefit pension plans. The standard replaced GASB Statement 25 for plan fiscal years beginning after June 15, 2013.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68). The accounting standard governing a governmental employer's accounting for pensions. The standard replaced GASB Statement 27 for employer fiscal years beginning after June 15, 2014.

Statement No. 74 of the Governmental Accounting Standards Board (GASB 74). The accounting standard establishing financial reporting standards for post-employment benefits other than pensions. The standard replaced GASB Statement 43 for plan fiscal years beginning after June 15, 2016.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75). The accounting standard governing a governmental employer's accounting for post-employment benefits other than pensions. The standard replaced GASB Statement 45 for employer 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 Tier 1/Tier 2 normal cost rates.

Total Actuarial Present Value of Benefits. Sometimes referred to simply as "Present Value of Benefits" (PVB) or "Total Liability", the present value of all prospective benefits projected to be paid to current plan members. This amount is equal to the sum of the actuarial accrued liability and the present value of future normal costs, and is unaffected by the choice of actuarial cost method.

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

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