



**OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM  
BOARD MEETING AGENDA**

<b>Friday December 7, 2018 10:00 A.M.</b>	<b>PERS 11410 SW 68<sup>th</sup> Parkway Tigard, OR</b>
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	ITEM	PRESENTER
<b>A. Administration</b>		
1.	October 5, 2018 Board Meeting Minutes	SHENOY
2.	Board Governance Assignments	
3.	Director's Report	OLINECK
	a. Forward-Looking Calendar	
	b. OPERF Investment Report	
	c. Budget Execution Report	
	d. Board Scorecard Report on Agency Performance Measures	RICKARD
<b>B. Administrative Rulemaking</b>		
	There are no pending notices or rule approvals	
<b>C. Action and Discussion Items</b>		
1.	Legislative Update	TAYLOR
2.	Unclaimed Moro Accounts	ELLEDGE-RHODES
3.	IAP TDF Implementation Update	ELLEDGE-RHODES
4.	Actuarial Financial Modeling Presentation	MILLIMAN

*Public testimony will be taken on action items at the Chair's discretion.*

*Please contact 503.603.7785 to notify staff of your request to provide testimony at the meeting or submit written testimony to [PERS.Board@state.or.us](mailto:PERS.Board@state.or.us) (three days in advance of the meeting is preferred.)*

<http://www.oregon.gov/PERS/>

**2019 Meetings:** February 1    April 1\*    May 31    July 26\*    October 4    December 6\*    \*Audit Committee

Stephen Buckley    Steve Demarest    Lawrence Furnstahl, Vice Chair    Krystal deAsis    Sadhana Shenoy, Chair    Kevin Olineck, Director

## **OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM BOARD MEETING MINUTES**

October 5, 2018

### **Board members present:**

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

### **Staff present:**

Amanda Marble, AnneMarie Vu, Debra Hembree, Elizabeth Rossman, Jessica Williams, Jason Stanley, Jordan Masanga, Katie Brogan, Kevin Olineck, Marjorie Taylor, MaryMichelle Sosne, Melanie Chandler, Neil Jones, Stephanie Vaughn, Yong Yang, Yvette Elledge-Rhodes

### **Others present:**

Gay Lynn Bath, Peter Wong, Matt Larrabee, Ron Vaught, Nate Carter, Scott Preppernau, Debra Grabler, Claire Havener, Shijie Liang, Aruna Masih, Trudy Vidal, Samantha Nalvan, Josh Eggleston, Jeff Renfro, Mike Jaspin, Ray Hubbell, Twylla Miller, David Lacy, Tim Nesbitt, Roger Dawes, David Moore, Carol Samuels, James Young, Jeff Gudman, Tahni Fagerberg, Edie Rusch, Sandra Montoya, Rosie Sanchez, Nancy Brewer, Scott Winkels

Chair Sadhana Shenoy called the meeting to order at 10:01 a.m.

### **ADMINISTRATION**

#### **A.1. MEETING MINUTES OF AUGUST 3, 2018**

Board member Buckley moved to approve the minutes submitted from the August 3, 2018 Board meeting. Board member deAsis seconded the approval of the minutes. The motion passed unanimously.

#### **A.2. DIRECTOR'S REPORT**

Director Kevin Olineck introduced Jessica Williams, Chief Financial Officer and Elizabeth Rossman, Communications Officer. Olineck reviewed the Forward Looking Calendar and noted that the Scorecard Report on agency performance measures and the actuarial financial modeling results will be agenda items at the December meeting.

Olineck presented the Oregon Investment Council (OIC) Investment Report of the Oregon Public Employees Retirement Fund (OPERF) for the period ending August 2018. The year-to-date earnings are 4.63percent.

Olineck presented the Budget Execution Report. He noted that the current projected positive variance is 4.7% of the operations budget. 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.

The Board Orientation Manuel was created by PERS as a resource to assist PERS Board Members. It is a living document and will continue to be updated on a regular basis. Shenoy commented that it has been very helpful.

## **ADMINISTRATIVE RULEMAKING**

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

### **B.1. ADOPTION OF IAP TARGET DATE FUND RULES**

Vaughn presented the change to the IAP Target Date Fund (TDF) rules. The TDF policy with regard to deceased, non-retired member accounts was altered. 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, the balance will be transferred to the Retirement Allocation Fund (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.

Demarest moved to adopt modifications to the IAP Target Date Fund rules, as presented. Furnstahl seconded the motion. The motion passed unanimously.

### **B.2. ADOPTION OF RULES IMPLEMENTING SB 1566 (2018)**

#### **a. Adoption of Pooled Side Accounts for School District Employers Rule**

This rule incorporates a section of Senate Bill 1566(2018) which 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. 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. 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.

Board member deAsis moved to adopt the Pooled Side Accounts for School District Employers rule, as presented. Buckley seconded the motion to adopt the rule. The motion passed unanimously.

#### **b. Adoption of Employer Lump Sum Payments Rules**

This rule allows 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). No modifications were made to this rule since notice or first reading.

Board member deAsis motioned to adopt modifications to the Employer Lump Sum Payments rules, as presented. Demarest seconded the motion. The motion passed unanimously.

## **ACTION AND DISCUSSION ITEMS**

### **C.1. LEGISLATIVE UPDATE**

Marjorie Taylor, Senior Policy Analyst, presented.

In preparation for the 2019 legislative session, staff requests that the Board confirm membership of the Legislative Advisory Committee (LAC). 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. The members meet infrequently on an as needed basis.

Board member Buckley moved to approve the recommended appointments, effective immediately. Board member deAsis seconded the motion to approve the recommended appointments. The motion passed unanimously.

During September Legislative Days PERS presented to the Emergency Board Committee. PERS also presented 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.

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

### **C.2 SB 1566 UPDATE**

MaryMichelle Sosne, Actuarial Business Analyst, presented.

- a. School District Unfunded Liability Fund  
The survey of this group closed on September 17, 2018 and the majority opted to maintain the current 20-year amortization schedule.
- b. Employer Incentive Fund  
Sosne gave an update on implementation activities. The final application and approval process will be presented to the Board during at the December 7, 2018 Board Meeting.

### **C.3 MEMBER & EMPLOYER SURVEY RESULTS**

Elizabeth Rossman, Communications Officer, presented.

Rossman presented an overview of the 2018 PERS annual satisfaction survey for members (non-retired and retired) and employers. Responses from members increased due to the use of GovDelivery email system. The main member issues that are being addressed are call wait times, PERS website navigation and content, and timeliness of estimates. The key employer issues were from employer statements and the employer website.

C.4 2017 VALUATION RESULTS AND ADOPTION OF EMPLOYER RATES

Actuaries Matt Larrabee and Scott Preppernau of Milliman presented the 2019-21 employer rates for adoption.

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.

Vice Chair Furnstahl moved to approve the 2019-21 individual employer contribution rates as recommended by the PERS actuary. Buckley seconded the motion. The motion passed unanimously.

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

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Kevin Olineck".

Kevin Olineck, Director

**PERS Board Governance Assignments**

**Proposed for 2019**

Stephen Buckley	Audit Committee
Steve Demarest	Legislative Advisory Committee Retiree Health Insurance Advisory Committee
Lawrence Furnstahl	Board Vice-Chair Legislative Advisory Committee
Krystal Gema	Audit Committee (Chair)
Sadhana Shenoy	Board Chair Audit Committee



## OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM DIRECTOR'S REPORT

KEVIN OLINECK, DIRECTOR

### PERS DIRECTOR'S REPORT AT A GLANCE

Welcome to the first edition of the PERS Director's Report. The intent of this report is to provide the PERS Board with a high level overview of work currently being undertaken by PERS staff or issues that the board should be aware of that are not highlighted or discussed as distinct agenda items at this meeting.

I believe it is vitally important for the board to provide the appropriate governance oversight of the agency. To do so, it needs to fully understand and appreciate the breadth and depth of the agency's work. It is also important to highlight other activities of the organization, such as community involvement, so the board can appreciate the culture of the organization.

This Report will evolve, as needed, to provide the fulsome, enterprise perspective board members need to keep apprised of relevant issues. It will also assist board members in making informed decisions about the agency so that, ultimately, we can appropriately fulfill the PERS mission.

#### BRANDING

The agency is undergoing one obvious change, updating our corporate brand. This is best evidenced in an updated website landing page, a new logo that is prominent in publications like PERS by the Numbers and the Comprehensive Annual Financial Report, as well as the overall look and feel of the Director's Report.

One objective of the PERS Strategic Plan is to brand PERS as a retirement education and planning resource. To properly engage PERS members throughout their pension lifecycle, we need to build out brand recognition. PERS will be more readily identifiable and members will relate the brand to their source for retirement education during life events that impact their retirement.

Given the magnitude of making a change to our branding enterprise-wide, we have a cascading plan to roll out the new brand in a measured way, as resources allow.

#### GOVERNOR'S RECOMMENDED BUDGET UPDATE

At the August board meeting, the board approved our 2019-21 agency budget proposal. We then submitted our proposal to the Government's Chief Financial Office, who worked with the agency to incorporate the majority of our budget proposal into the 2019-21 Governor's Recommended Budget. Although our funding is via investment earnings and administrative fees collected

from members, and not the State's General or other funds, the agency is subject to the overall Governor's goal of having a balanced budget. Consequently, some of our proposed elements were not included in the Governor's Recommended Budget that was released on November 28th. We anticipate that PERS staff will make presentations to the General Government Subcommittee of Ways and Means during the 2019 legislative session to provide further context and substantiation to our budgetary requests. We will provide the board with updates as we move through this process.

#### OREGON SAVINGS GROWTH PLAN (OSGP) EXPO

PERS and OSGP hosted our third Retirement Expo in conjunction with National Retirement Security Week. This year's theme was "Explore Your Financial Future" and was attended by over 3,000 members. They participated in a wide variety of individual sessions related to exploring their retirement future. The Expo has become a huge success, as evidenced by earning two successive National Association of Government Defined Contribution Administrators (NAGDCA) Leadership Recognition Awards. This award recognizes Oregon Public Employees Retirement System for outstanding achievements in the National Retirement Security Week - General Campaign category. We are hopeful this year's Expo will be similarly recognized.

#### COMPREHENSIVE ANNUAL FINANCIAL REPORT (CAFR)

Our 2018 Comprehensive Annual Financial Report will be published in early December. The CAFR represents a significant effort by the agency as it truly lives up to its descriptor: "comprehensive." The agency is proud to win, for the 15th year running, the 2018 Public Pension Standards Award For Funding and Administration related to our 2017 CAFR, as recognized by the Public Pension Coordinating Council, a confederation of the National Association of State Retirement Administrators (NASRA), the National Conference on Public Employee Retirement Systems (NCPERS), and the National Council on Teacher Retirement (NCTR). Additionally, for the 27th consecutive year, we were awarded a Certificate of Achievement for Excellence in Financial Reporting from the Government Finance Officers Association for the 2017 CAFR.

## SECRETARY OF STATE'S AUDIT & RELATED PROJECT UPDATES

As I noted to the board in early October, the results of the Secretary of State's Audit on the PERS Information Technology Strategic Planning Process and our Disaster Recovery Program, and the agency response, were released on October 17. <https://sos.oregon.gov/audits/Documents/2018-32.pdf>

The PERS Mission is to pay the right person, the right benefit, at the right time, and the functionality of our technology systems and disaster preparedness planning are key to that mission. We are committed to improving our capabilities in these areas, and have identified opportunities for improvements in recent years, which the audit report validates. We are incorporating the practices suggested in the audit, as we hone our focus on enterprise strategic planning and communication with stakeholders about our continuing progress toward change.

We anticipate implementation of at least 13 of the 16 recommendations outlined in the audit report by June 30, 2019. The remaining areas are part of a multi-year effort to address the recommendations and to integrate enhancements into our everyday processes. The distinct projects that are addressing these recommendations continue to be within defined scope, schedule and cost. We are asking for two additional staff at the December Emergency Board meeting to enable us to maintain our resiliency efforts going into the future. We are optimistic we will receive approval to move forward on these important hirings.

There was minimal media attention with respect to the release of this audit. I believe the attention was mitigated by the fact that PERS has a solid plan in place to have these recommendations completed within a fairly short timeframe. We will provide updates on our progress as part of future Audit Committee meetings.

### ADVISORY COMMITTEE MEETINGS

In October, the PERS staff that administer the PERS Health Insurance Program (PHIP) conducted an orientation session for Steve Demarest, the PERS Board representative on the PHIP Advisory Committee, as well as new senior PERS staff. This was a great opportunity for staff, and the consultants who provide advisory services, to provide a high level overview of the workings of PHIP and it was very beneficial in setting a baseline with respect to this line of business.

In November, both the PHIP Advisory Committee and the Oregon Savings Growth Plan (OSGP) Advisory Committees met. As Director, this was the first time I have had an opportunity to attend these meetings and understand the role of the Advisory Committees relative to the PERS Board. As PERS evolves in alignment with our 2018-23 Strategic Plan, it is important to understand both the level of separation as well as integration that both the PHIP and OSGP programs require in order for the full enterprise to be successful. These meetings helped to provide insights into that alignment.

With respect to OSGP, after the Advisory Committee meeting, PERS staff met with Voya, our third party service provider, as well as our other OSGP consultants to develop a short-term strategy that moves toward defining the appropriate levels of separation and integration from an enterprise perspective.

### A CULTURE OF COMMUNITY

In many ways, the culture of an organization is shaped by how staff come together to support its own and others. A culture of community is one that seeks to improve both the internal "working" community as well as the external community within which we live and work. Below are a few examples of this strong culture of community embedded within the organization.

### CHARITABLE FUND DRIVE

PERS staff are ardent supporters of the Charitable Fund Drive (CFD), a cross-governmental annual fundraising initiative. Staff are engaged in supporting the CFD through direct monetary pledges and various other fundraising activities. This is a great example of staff coming together as a community to support our external community. We are hoping to regain our position as top governmental fundraising entity for similar sized organizations due to our great response

### CHILDREN'S TRANSITIONAL SCHOOL HALLOWEEN

The PERS Community and Diversity Committees put on our annual Halloween event for the kids from the Community Transitional School (CTS); a tradition that extends over 25 years. We had over 70 children come to our head office location to participate in judging our Halloween Costume parade, have lunch with staff and trick-or-treat in the building. Staff participation also includes providing the CTS with much needed supplies to continue their good works.



PERS Board Meeting

December 7, 2018



## PERS Board Meeting Forward-Looking Calendar

### **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  
Oregon Investment Council Performance Review - John Skjervem

### **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  
Strategic Plan Update  
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 OCT-2018

Oregon Public Employees Retirement Fund

OPERF	Regular Account			Historical Performance (Annual Percentage)								
	Policy <sup>1</sup>	Target <sup>1</sup>	\$ Thousands <sup>2</sup>	Actual	Year-To-Date <sup>3</sup>	1 YEAR	2 YEARS	3 YEARS	4 YEARS	5 YEARS	7 YEARS	10 YEARS
Public Equity	32.5-42.5%	37.5%	\$ 25,216,724	34.3%	(4.54)	(0.96)	11.24	8.36	6.47	6.56	9.65	10.77
Private Equity	13.5-21.5%	17.5%	\$ 15,751,620	21.4%	13.43	16.84	17.25	12.08	11.12	13.13	12.03	10.27
<b>Total Equity</b>	<b>50.0-60.0%</b>	<b>55.0%</b>	<b>\$ 40,968,344</b>	<b>55.7%</b>								
Opportunity Portfolio	0-3%	0%	\$ 1,664,545	2.3%	7.40	8.88	9.19	8.29	7.04	6.95	9.05	8.52
<b>Total Fixed</b>	<b>15-25%</b>	<b>20.0%</b>	<b>\$ 16,068,988</b>	<b>21.8%</b>	<b>(1.24)</b>	<b>(0.94)</b>	<b>0.34</b>	<b>1.52</b>	<b>1.49</b>	<b>1.85</b>	<b>3.00</b>	<b>6.21</b>
Real Estate	9.5-15.5%	12.5%	\$ 8,221,905	11.2%	7.53	9.59	9.91	8.86	9.51	10.28	10.82	6.78
Alternative Investments	0-12.5%	12.5%	\$ 6,652,587	9.0%	(1.77)	0.37	4.89	3.51	1.94	2.80	1.92	
Cash w/Overlay	0-3%	0%	\$ 15,673	0.0%	1.61	1.76	1.52	1.38	1.16	1.05	1.05	1.19
<b>TOTAL OPERF Regular Account</b>		<b>100.0%</b>	<b>\$ 73,592,042</b>	<b>100.0%</b>	<b>1.51</b>	<b>4.04</b>	<b>9.44</b>	<b>7.43</b>	<b>6.49</b>	<b>7.14</b>	<b>8.48</b>	<b>9.09</b>
OPERF Policy Benchmark					2.03	4.46	9.80	7.92	6.99	7.80	9.12	9.35
Value Added					(0.52)	(0.42)	(0.36)	(0.49)	(0.50)	(0.65)	(0.64)	(0.27)

Target Date Funds

2,191,687

TOTAL OPERF Variable Account

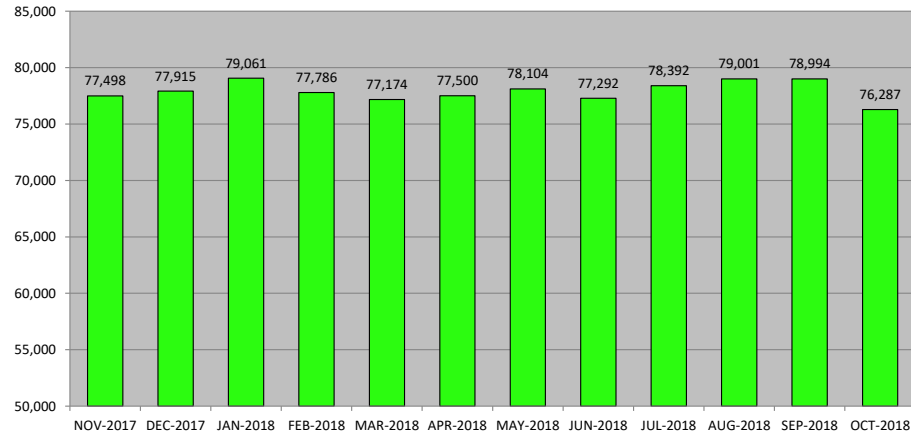
\$ 503,454

(4.05) (0.54) 11.04 8.21 6.23 6.52 9.27 10.35

Asset Class Benchmarks:

Russell 3000	2.43	6.60	14.96	11.27	9.54	10.81	13.81	13.35
OREGON MSCI ACWI EX US IMI NET	(11.35)	(8.44)	6.46	4.52	2.35	1.86	4.68	7.37
MSCI ACWI IMI NET	(4.42)	(0.95)	10.61	7.78	5.81	6.12	8.87	10.07
RUSSELL 3000+300 BPS QTR LAG	15.08	19.13	21.61	15.88	14.51	17.25	16.79	14.17
OREGON CUSTOM FI BENCHMARK	(1.34)	(1.06)	0.04	1.18	1.16	1.46	2.41	4.25
OREGON CUSTOM REAL ESTATE BENCHMARK	6.39	7.55	7.51	8.41	9.53	9.87	10.30	6.27
CPI +4%	5.98	6.61	6.36	6.14	5.65	5.66	5.65	5.59
91 Day Treasury Bill	1.48	1.68	1.20	0.90	0.68	0.55	0.42	0.35

**Total OPERF NAV**  
(includes Variable Fund asset)  
**One year ending OCT-2018**  
(\$ in Millions)



<sup>1</sup>OIC Policy revised June 2015.

<sup>2</sup>Includes impact of cash overlay management.

<sup>3</sup>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.



# Oregon

Kate Brown, Governor

## Public Employees Retirement System

Headquarters:  
11410 S.W. 68<sup>th</sup> Parkway, Tigard, OR  
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[www.oregon.gov/pers](http://www.oregon.gov/pers)

December 7, 2018

TO: Members of the PERS Board  
FROM: Linda M. Barnett, Budget Officer  
SUBJECT: December 2018 Board Report

### 2017-19 OPERATING BUDGET

Operating expenditures for September 2018 and preliminary expenditures for October 2018 were \$4,530,160 and \$3,969,868 respectively. Final expenditures for October closed in the Statewide Financial Management System (SFMS) on November 16, 2018, and will be included in the February 2019 report to the Board.

- To date, through the first 16 months (or 66.7%) of the 2017-19 biennium, the agency has expended a total of \$60,283,459 or 59.4% of PERS' adjusted legislatively approved operations budget of \$101,458,179. The establishment of one investment accountant position (0.38 FTE) and an increase in expenditure limitation in the amount of \$79,291 were approved by the Emergency Board at their September 2018 meeting. The Department of Administrative Services (DAS) will increase the limitation when PERS updates the position duties to only include trust fund-related activities. PERS submitted this information to DAS on November 6, 2018 and a response is pending.
- The current projected positive variance is \$4,056,356 or approximately 4% of the operations budget.

### DECEMBER 2018 EMERGENCY BOARD REQUESTS

Staff prepared a request to increase budget limitation in the amount of \$619,542 and to establish two full-time permanent positions in the Compliance, Audit, and Risk Division (CARD). The positions and increase in budget are critical to protect the privacy of member data and to successfully build a solid information security program. In addition, PERS requested to move \$500,000 from the Information Services Division (ISD) to CARD to implement a consolidated program, known as the Continuity Management Program, which will include Disaster Recovery, Business Continuity, and the new statewide Continuity of Operations Program.

Staff also prepared a request to increase budget limitation in the amount of \$1,698,000 in the Financial Administrative Services Division to address a reporting and contract change with the Oregon Savings Growth Plan (OSGP). Under the new contract, all administrative operating expenditures, except third party administrative expenses, will be paid out of the PERS Other Funds limitation. This will increase transparency and allow for more detailed record keeping. The new contract does not increase the overall cost OSGP pays for administrative and investment services.

2017-19 NON-LIMITED BUDGET

The approved budget also consists of \$11,059,072,492 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).

Retirement benefit payments have exceeded estimated budget; this trend has been offset by an overestimation in health insurance premiums. PERS will request an increase in Non-Limited budget in the next quarter through DAS' Chief Financial Office and the Legislative Fiscal Office.

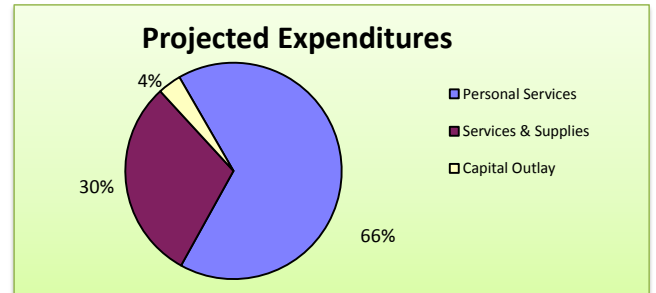
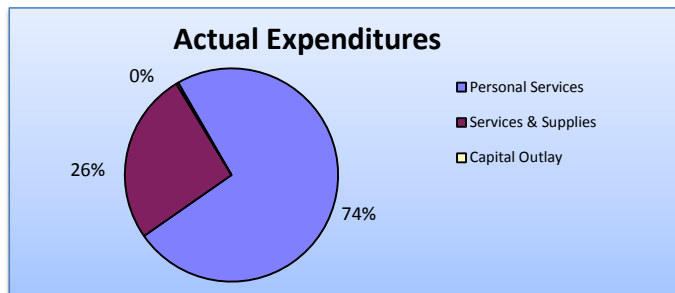
A.3.c. Attachment 1– *2017-19 Agency-wide Budget Execution Summary Analysis*

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

**Limited - Operating Budget**

**2017-19 Biennial Summary**

Category	Actual Exp. To Date	Projected Expenditures	Total Est. Expenditures	2017-19 LAB	Variance
Personal Services	44,396,692	24,641,105	69,037,797	73,332,965	4,295,168
Services & Supplies	15,694,142	11,179,364	26,873,507	26,830,862	(42,645)
Capital Outlay	192,625	1,297,895	1,490,520	1,294,352	(196,168)
<b>Total</b>	<b>60,283,459</b>	<b>37,118,364</b>	<b>97,401,823</b>	<b>101,458,179</b>	<b>4,056,356</b>



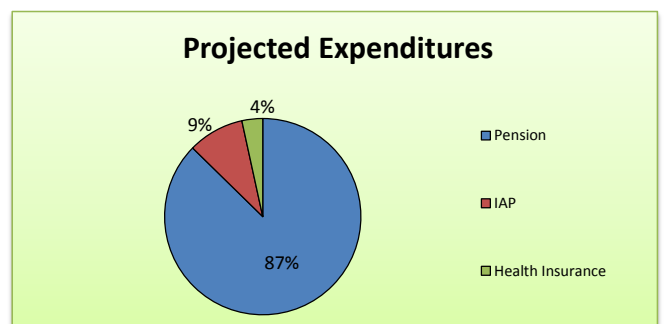
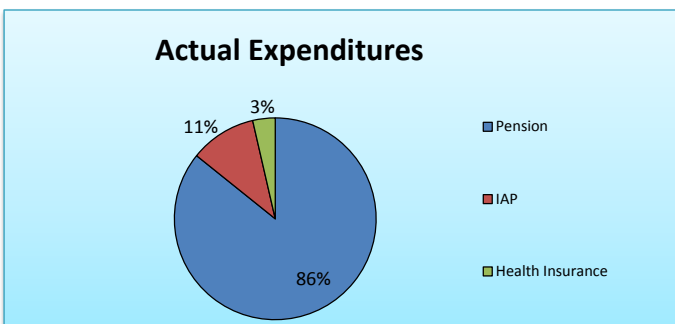
**Monthly Summary**

Category	Actual Exp.	Projections	Variance	Avg. Monthly Actual Exp.	Avg. Monthly Projected Exp.
Personal Services	2,889,351	3,071,324	181,973	2,774,793	3,080,138
Services & Supplies	1,080,517	1,283,892	203,376	980,884	1,397,421
Capital Outlay	0	0	0	12,039	162,237
<b>Total</b>	<b>3,969,868</b>	<b>4,355,216</b>	<b>385,348</b>	<b>3,767,717</b>	<b>4,639,796</b>

**Non-Limited Budget**

**2017-19 Biennial Summary**

Programs	Actual Exp To Date	Projected Expenditures	Total Est. Expenditures	Non-Limited LAB	Variance
Pension	5,944,154,248	3,604,940,708	9,549,094,956	9,122,000,000	(427,094,956)
IAP	737,478,940	381,906,520	1,119,385,460	1,056,900,000	(62,485,460)
Health Insurance	249,461,185	141,130,891	390,592,076	815,271,000	424,678,924
<b>Total</b>	<b>6,931,094,373</b>	<b>4,127,978,119</b>	<b>11,059,072,492</b>	<b>10,994,171,000</b>	<b>(64,901,492)</b>





# Oregon

Kate Brown., Governor

## Public Employees Retirement System

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December 7, 2018

TO: Members of the PERS Board  
FROM: POBMS Council  
SUBJECT: Board Scorecard Report on Agency Performance Measures

A key part of PERS' Outcome-Based Management System (POBMS) is a Quarterly Target Review of scorecards that evaluate our effectiveness in a number of Outcome and Process Measures. These measures foster accountability and transparency in key operating areas. The scorecard results help direct strategic planning, resource allocation, and risk assessment.

The attached Board Scorecard Report for third quarter 2018 focuses on several measures we currently track based on essential business operations. A targeted performance range is created for each measure:

- “Green” – performance is at or above acceptable levels.
- “Yellow” – performance is marginally below acceptable levels.
- “Red” – performance is significantly below; corrective action such as assigning a problem solving team should be directed.

Highlights include the following:

- Significant improvement over the last four quarters in Percentage of Estimates Completed in 30 days.
- Half of the highlighted measures in the Green range.
- An upward or equal trend with six of the eight measures.
- Appeal reversal rate improved from Red to Green range.

The next report will be presented on May 31, 2019, showing the scorecard results for the first quarter.

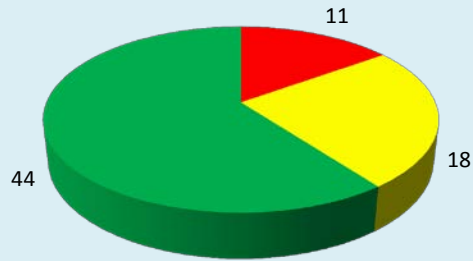
A.3.d. Attachment 1 – *Board Scorecard Report for Third Quarter 2018*

# PUBLIC EMPLOYEES RETIREMENT SYSTEM

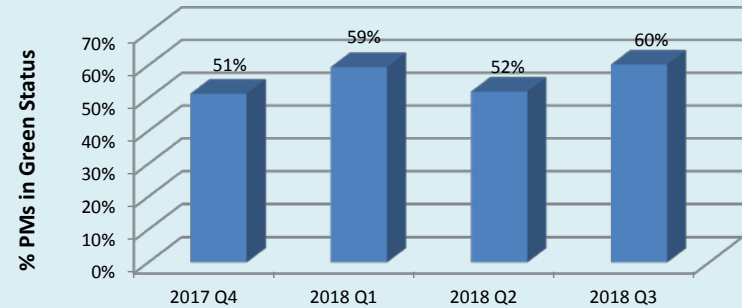
## Outcome-Based Performance Review

### PERS Board Scorecard Report - QTR: 2018 Q3 - Quarter ended September 30, 2018

**Outcome & Process Measure Performance**



**Quarterly Green Performance**



### Operating Processes - Highlighted Measures

	Measure Name	Measure Calculation	RANGE			Target	Desired Perform Trend	Data Collection Frequency	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Trend	Corrective Action & Comments
			Red	Yellow	Green									
OP3c	Estimate KPM	% of estimate requests completed within 30 days of receipt	<75%	75-85	>85%	95%	↑	Quarterly	19.0%	30.0%	53.8%	76.0%	+	22% gain from last quarter: processed total of 3011 estimate requests
OP4a	Eligibility review completed	% of applications completed by the eligibility team within 30 days of the effective retirement	<50%	50-70	>70%	80%	↑	Monthly	86.0%	84.0%	86.0%	86.0%	=	
OP5b	Accuracy of calculations	% of sample calculations that are accurate within plus or minus \$5	<95%	95-99	>99%	100%	↑	Monthly	100.0%	100.0%	97.5%	99.9%	+	
OP5c	Timely benefit calculation	% of calculations completed within 15 calendar days from completed application date	<95%	95-99	>99%	100%	↑	Monthly	95.0%	95.6%	96.5%	90.2%	-	High volume of July

# PUBLIC EMPLOYEES RETIREMENT SYSTEM

## Outcome-Based Performance Review

### Supporting Processes - Highlighted Measures

	Measure Name	Measure Calculation	RANGE			Target	Desired Perform Trend	Data Collection Frequency	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Trend	Corrective Action & Comments
			Red	Yellow	Green									
OP1f	Call wait time	Average length of wait before caller reaches live person	>6 minutes	6-4 minutes	<4 minutes	2 minutes	↓	Monthly	16.0	24.1	17.3	13.2	+	Cut ASA almost in half from Aug to Sept; ASA continues to lower now Call Ctr is almost completely staffed; i.e., Oct ASA at 5 mins even with spikes throughout the month
SP2c	Appeal reversal rate	% of staff determinations that are reversed on appeal	>15%	15-10	<10%	5%	↓	Quarterly	2.8%	28.0%	20.0%	8.0%	+	
SP3h	System uptime	% of time systems are available during the service window	<97%	97-98	>98%	100%	↑	Monthly	99.31%	99.59%	97.20%	99.05%	+	
SP5c	Recruiting / Onboarding	% of employees completing trial service	<85%	85-94	>94%	100%	↑	Quarterly	87%	100%	97%	94%	-	There were 29 employees completing trial service out of 31 possible.





# Oregon

Kate Brown, Governor

## Public Employees Retirement System

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December 7, 2018

TO: Members of the PERS Board  
FROM: Marjorie Taylor, Senior Policy Director  
SUBJECT: Legislative Update

### **DECEMBER LEGISLATIVE DAYS**

PERS will make two requests of the Emergency Board during Legislative Days next week. First is a request to increase Other Funds limitation to address a reporting and contract change with the Oregon Savings Growth Plan (OSGP). A new contract with the third-party administrator has modified the way that administrative fees and operating costs are paid. This change will increase transparency and allow for more detailed record keeping of expenses by PERS.

Second is a request for an increase in Other Funds limitation and the establishment of two full-time positions to address data privacy work and the Continuity and Disaster Recovery Program. These staff will focus on data privacy, in accordance with statewide and agency standards as directed by the Enterprise Security Office, and manage the agency Continuity Management program to ensure appropriate and timely emergency response, resumption, restoration, and recovery of PERS operations.

### **AGENCY LEGISLATION – 2019 SESSION**

PERS has requested that the Governor pre-session file one agency bill to resolve implementation issues with [Senate Bill 1566 \(2018\)](#), which 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 \(2018\)](#).

As currently drafted, the agency-requested Legislative Concept 565 (10/15/18) - relating to employer contributions to the Public Employees Retirement System - accomplishes the following (Attachment 1):

- 1) Eliminates the restriction on the Board to only open the EIF application window after making a determination of sufficient funds in EIF (currently scheduled for 2021).
- 2) Narrows the initial EIF application window for employers with UAL exceeding 200 percent of payroll from 180 days to 90 days.
- 3) Allows 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) Requires employers to make qualifying lump sum payments no later than September 30, 2021. This allows the deposits to be reflected in a rate-setting system valuation.
- 5) Limits participation in the UALRP to only those employers who apply for EIF matching funds.
- 6) Repeals the UALRP on January 2, 2025, to coincide with the end date for the EIF.
- 7) Allows earnings on the corpus of EIF to be used to match qualifying employer payments.

- 8) Clarifies when certain revenue streams will be deposited into the School Districts Fund to coincide with the best timing for system valuations.
- 9) Has an emergency clause on the bill to allow for the fastest implementation of the programs as funds allow.

If funds are available to capitalize the EIF and the School Districts Unfunded Liability Fund sooner than currently anticipated, provisions of this measure will allow for more timely and flexible deployment of that revenue to the benefit of PERS-participating employers.

We look forward to providing updates throughout the 2019 legislative session on this bill and others that may be reviewed in various policy committees.

C.1. Attachment 1 – *LC 565 (10/15/18)*

LC 565  
 2019 Regular Session  
 45900-001  
 10/15/18 (MNJ/ps)

# D R A F T

## SUMMARY

Provides that interest earned by Employer Incentive Fund may be used to match lump sum payments by participating public employers in Public Employees Retirement System.

Shortens time period during which participating public employers in Public Employees Retirement System must make lump sum payments to receive matching funds from Employer Incentive Fund. Shortens time period during which certain employers have priority to reserve matching funds from Employer Incentive Fund.

Provides for certain transfers to School Districts Unfunded Liability Fund to occur on last business day of odd-numbered year.

Limits participation in Unfunded Actuarial Liability Resolution Program to participating public employers that have applied to reserve matching amounts from Employer Incentive Fund.

Sunsets Unfunded Actuarial Liability Resolution Program on January 2, 2025.

Declares emergency, effective on passage.

## A BILL FOR AN ACT

1  
 2 Relating to employer contributions to the Public Employees Retirement  
 3 System; amending sections 1, 2, 3, 13, 15 and 26, chapter 105, Oregon Laws  
 4 2018; repealing section 26, chapter 105, Oregon Laws 2018; and declaring  
 5 an emergency.

6 **Be It Enacted by the People of the State of Oregon:**

7 **SECTION 1.** Section 1, chapter 105, Oregon Laws 2018, is amended to  
 8 read:

9 **Sec. 1.** (1) The Employer Incentive Fund is established in the State  
 10 Treasury, separate and distinct from the General Fund. Interest earned by

1 the Employer Incentive Fund shall be credited to the fund[, *but*]. Interest  
2 earned **by the fund** may [*not*] be used under section 2, **chapter 105, Oregon**  
3 **Laws 2018**, [*of this 2018 Act*] to match lump sum payments made under ORS  
4 238.229.

5 (2) Moneys in the fund are continuously appropriated to the Public Em-  
6 ployees Retirement Board for the purposes described in sections 2 and 26,  
7 **chapter 105, Oregon Laws 2018** [*of this 2018 Act*].

8 **SECTION 2.** Section 2, chapter 105, Oregon Laws 2018, is amended to  
9 read:

10 **Sec. 2.** (1)(a) The Public Employees Retirement Board shall establish a  
11 process for distributing the moneys in the Employer Incentive Fund estab-  
12 lished under section 1, **chapter 105, Oregon Laws 2018** [*of this 2018 Act*].

13 (b) The process must allow a participating public employer to apply to  
14 reserve matching amounts in the Employer Incentive Fund by committing to  
15 make a qualifying lump sum payment of at least \$25,000 to an account es-  
16 tablished under ORS 238.229.

17 (2) The board shall adopt rules establishing:

18 (a) The percentage of a lump sum payment that may be matched by dis-  
19 tributions from the fund, not to exceed 25 percent of a qualifying lump sum  
20 payment.

21 (b) The maximum matching amount that may be reserved by a partic-  
22 ipating public employer, not to exceed the greater of:

23 (A) Five percent of the unfunded actuarial liability attributable to the  
24 employer, as determined in the most recent report prepared under ORS  
25 238.605; or

26 (B) \$300,000.

27 (c) The qualifications for lump sum payments that may be matched under  
28 this section. The qualifications must include the following requirements:

29 (A) The participating public employer must apply to reserve matching  
30 funds no later than December 31, 2019.

31 (B) The participating public employer must make the qualifying lump sum

1 payment no later than [*July 1, 2023*] **September 30, 2021**.

2 (C) A qualifying lump sum payment may not be a payment from moneys  
3 borrowed by the employer.

4 (d) A requirement that the participating public employer participate in  
5 the Unfunded Actuarial Liability Resolution Program to develop a plan un-  
6 der section 26, **chapter 105, Oregon Laws 2018** [*of this 2018 Act*].

7 [(3)(a) *The board may begin accepting applications under subsection (1) of*  
8 *this section on the date on which the board determines that there are sufficient*  
9 *moneys in the Employer Incentive Fund.*]

10 [(b)] **(3)(a)** For [180] **90** days after the board begins accepting applications  
11 under subsection (1) of this section, a participating public employer may  
12 apply to reserve matching amounts from the Employer Incentive Fund under  
13 subsection (1) of this section only if the unfunded actuarial liability attrib-  
14 utable to the employer, as determined in the most recent report prepared  
15 under ORS 238.605, is more than 200 percent of the employer's payroll for  
16 members of the Public Employees Retirement System.

17 [(c)] **(b)** After the [180-day] **90-day** period described in paragraph [(b)] **(a)**  
18 of this subsection, any participating public employer may apply to reserve  
19 matching funds from the Employer Incentive Fund under subsection (1) of  
20 this section.

21 (4)(a) The board shall approve applications that meet the qualifications  
22 established under subsection (2) of this section in the order in which the  
23 applications are submitted. The board shall continue approving applications  
24 as long as **adequate** moneys in the Employer Incentive Fund are **projected**  
25 **to become** available.

26 **(b) After all of the moneys projected to become available in the**  
27 **Employer Incentive Fund are reserved for matching under paragraph**  
28 **(a) of this subsection, the board may establish a waiting list for the**  
29 **remaining timely submitted applications and, if sufficient moneys in**  
30 **the Employer Incentive Fund become available, shall approve, in the**  
31 **order in which they were submitted, applications that meet the quali-**

1 **fications under subsection (2) of this section.**

2 (5) The board shall transfer matching amounts approved under subsection  
3 (4) of this section from the Employer Incentive Fund to the approved  
4 employers' accounts established under ORS 238.229.

5 (6) The board may transfer moneys from the Employer Incentive Fund to  
6 the Public Employees Retirement Fund established under ORS 238.660 for  
7 crediting to the reserves for pension accounts and annuities as provided in  
8 ORS 238.670 (2).

9 (7) The board may use moneys in the Employer Incentive Fund for rea-  
10 sonable administrative costs incurred under this section.

11 **SECTION 3.** Section 3, chapter 105, Oregon Laws 2018, is amended to  
12 read:

13 **Sec. 3.** (1) Section 2, **chapter 105, Oregon Laws 2018, as amended by**  
14 **section 2 of this 2019 Act, [of this 2018 Act]** is repealed January 2, 2025.

15 (2)(a) The Employer Incentive Fund established under section 1, **chapter**  
16 **105, Oregon Laws 2018, [of this 2018 Act]** is abolished on January 2, 2025.

17 (b) The unexpended moneys remaining in the Employer Incentive Fund  
18 on January 2, 2025, shall be transferred to the General Fund.

19 **(3) Section 26, chapter 105, Oregon Laws 2018, as amended by section**  
20 **6 of this 2019 Act, is repealed on January 2, 2025.**

21 **SECTION 4.** Section 13, chapter 105, Oregon Laws 2018, is amended to  
22 read:

23 **Sec. 13.** (1) Not earlier than July 1 and not later than October 1 of the  
24 years 2019, 2021 and 2023, the division of the Oregon Department of Admin-  
25 istrative Services that serves as office of economic analysis shall:

26 (a) Calculate the rate of change in the tax liability from personal income  
27 taxes on taxable capital gains during the five preceding biennia; and

28 (b) Use the rate of change calculated under paragraph (a) of this sub-  
29 section to forecast the tax liability from personal income taxes on taxable  
30 capital gains for the biennium beginning on July 1 of the year in which the  
31 calculation is made.

1 (2) Not later than November 1 of the odd-numbered year following each  
2 calculation under subsection (1) of this section, the Oregon Department of  
3 Administrative Services, in consultation with the Department of Revenue,  
4 shall estimate the tax liability from personal income taxes on taxable capital  
5 gains for the previous biennium.

6 (3) Not later than November 30 of the odd-numbered year in which the  
7 estimate is made under subsection (2) of this section, the Oregon Department  
8 of Administrative Services, in consultation with the Department of Revenue,  
9 shall determine whether the tax liability from personal income taxes on  
10 capital gains estimated under subsection (2) of this section, less any amount  
11 required to be returned to taxpayers under ORS 291.349, exceeds the tax li-  
12 ability from personal income taxes on taxable capital gains forecasted under  
13 subsection (1) of this section.

14 (4) Except as provided in subsection (5) of this section, **on the last**  
15 **business day of the odd-numbered year in which the estimate is made**  
16 **under subsection (2) of this section**, the Department of Revenue shall  
17 transfer an amount equal to 25 percent of any excess calculated under sub-  
18 section (3) of this section to the School Districts Unfunded Liability Fund  
19 established in section 24, **chapter 105, Oregon Laws 2018** [*of this 2018*  
20 *Act*].

21 (5) The Department of Revenue may not make a transfer under subsection  
22 (4) of this section if:

23 (a) The Legislative Assembly has appropriated moneys from the Oregon  
24 Rainy Day Fund under ORS 293.144 on or after [*the effective date of this 2018*  
25 *Act*] **June 2, 2018**; or

26 (b) The Public Employees Retirement System is more than 90 percent  
27 funded as determined in accordance with rules adopted by the Public Em-  
28 ployees Retirement Board.

29 (6) The Department of Revenue shall retain unreceipted revenue from the  
30 tax imposed under ORS chapter 316 in an amount necessary to make the  
31 transfer required under subsection (4) of this section. The department shall

1 make the transfer out of the unreceipted revenue in lieu of paying the reve-  
2 nue over to the State Treasurer for deposit in the General Fund.

3 **SECTION 5.** Section 15, chapter 105, Oregon Laws 2018, is amended to  
4 read:

5 **Sec. 15.** (1) Not earlier than July 1 and not later than October 1 of the  
6 years 2019, 2021 and 2023, the division of the Oregon Department of Admin-  
7 istrative Services that serves as office of economic analysis shall:

8 (a) Calculate the rate of change in collections from estate taxes during  
9 the five preceding biennia; and

10 (b) Use the rate of change calculated under paragraph (a) of this sub-  
11 section to forecast the collections from estate taxes for the biennium begin-  
12 ning on July 1 of the year in which the calculation is made.

13 (2) Not later than November 1 of the odd-numbered year following each  
14 calculation under subsection (1) of this section, the Oregon Department of  
15 Administrative Services, in consultation with the Department of Revenue,  
16 shall estimate the collections from estate taxes for the previous biennium.

17 (3) Not later than November 30 of the odd-numbered year in which the  
18 estimate is made under subsection (2) of this section, the Oregon Department  
19 of Administrative Services, in consultation with the Department of Revenue,  
20 shall determine whether the collections from estate taxes estimated under  
21 subsection (2) of this section exceed the collections from estate taxes fore-  
22 casted under subsection (1) of this section.

23 (4) **On the last business day of the odd-numbered year in which the**  
24 **estimate is made under subsection (2) of this section,** the Department  
25 of Revenue shall transfer an amount equal to the amount of any excess cal-  
26 culated under subsection (3) of this section, less any amount required to be  
27 returned to taxpayers under ORS 291.349, to the School Districts Unfunded  
28 Liability Fund established in section 24, **chapter 105, Oregon Laws 2018**  
29 [*of this 2018 Act*].

30 (5) The Department of Revenue shall retain unreceipted revenue from es-  
31 tate taxes imposed under ORS 118.005 to 118.540 in an amount necessary to



1 make the transfer required under subsection (4) of this section. The depart-  
2 ment shall make the transfer out of the unreceipted revenue in lieu of paying  
3 the revenue over to the State Treasurer for deposit in the General Fund.

4 **SECTION 6.** Section 26, chapter 105, Oregon Laws 2018, is amended to  
5 read:

6 **Sec. 26.** (1) The Public Employees Retirement Board shall establish an  
7 Unfunded Actuarial Liability Resolution Program. Under the program, the  
8 board shall provide technical expertise to participating public employers  
9 **that have applied to reserve matching amounts under section 2,**  
10 **chapter 105, Oregon Laws 2018, from the Employer Incentive Fund es-**  
11 **tablished in section 1, chapter 105, Oregon Laws 2018,** in developing  
12 plans to improve the employers' funded status and to manage projected em-  
13 ployer contribution rate changes. Participating public employers are not re-  
14 quired to participate in the program.

15 (2) The board may use moneys in the Employer Incentive Fund [*estab-*  
16 *lished in section 1 of this 2018 Act*] for reasonable administrative costs in-  
17 curred under this section.

18 **SECTION 7. This 2019 Act being necessary for the immediate pres-**  
19 **ervation of the public peace, health and safety, an emergency is de-**  
20 **clared to exist, and this 2019 Act takes effect on its passage.**

21

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# Oregon

Kate Brown, Governor

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December 7, 2018

TO: Members of the PERS Board  
FROM: Yvette Elledge-Rhodes, Deputy Director  
SUBJECT: Unclaimed *Moro* Accounts

### **BACKGROUND**

The Oregon Supreme Court issued its decision in the *Moro* case on April 30, 2015, invalidating the application of cost-of-living adjustment (COLA) reductions enacted by Senate Bill 822 (effective May 6, 2013) and Senate Bill 861 (effective October 8, 2013) as applied to benefits earned before the effective dates of those bills. In order to comply with the Supreme Court decision, PERS initiated and completed a project to restore COLA payments to benefit recipients and enhance its systems to implement the new COLA allocation going forward.

In addition to adjusting all current benefit payments, PERS had to notify a population which represented successors to all benefit recipients (about 7,400) who passed away before their cost-of-living adjustment (COLA) was restored. The ongoing work associated with the post-*Moro* Decision Project involved processing claims made by the successors of benefit recipients who passed away before their cost-of-living adjustment (COLA) was restored. This work transitioned to normal business when the project closed on June 30, 2017. At that time, there were over 4,500 such potential claims remaining; notices had been distributed on all of these accounts, but we had not yet received responding claims.

### **UNCLAIMED MORO ACCOUNTS**

In our project closure report to the Board on July 28, 2017, PERS reported that we would coordinate with Oregon Department of State Lands (DSL) to add these accounts to their unclaimed property program so potential recipients could still claim the payment through their process if they do not respond directly to PERS.

On December 7, 2017, PERS met with DSL to work through the details of this process. In that meeting, DSL reported that they are no longer able to take in these types of accounts and advised PERS to review alternative solutions to make information about these unclaimed funds available to the public.

In an effort to ensure that these claims are accessible, PERS has decided to make the list of unclaimed *Moro* deceased accounts available on the PERS website. The following data will be published on the PERS website as “Unclaimed deceased member benefits”:

- Member’s full name
- Member’s last known address
- Dollar amount threshold of the payment (below \$100 or above \$100)
- The reported year (2018 for all accounts)

*Note: The above data mirrors the data published on DSL’s unclaimed property page.*

Unclaimed *Moro* Accounts

12/7/18

Page 2 of 2

Specific instructions for potential recipients to apply for these funds will be posted on the PERS website along with the list and our service level agreement that recipients can expect a response from PERS within 30 days.

**OTHER UNCLAIMED ACCOUNTS**

PERS is considering expanding this process to include other unclaimed accounts and will explore how to implement this going forward.



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December 7, 2018

TO: Members of the PERS Board  
FROM: Yvette Elledge-Rhodes, Deputy Director  
SUBJECT: IAP TDF Implementation Update

### **BACKGROUND**

At the September 20, 2017 Oregon Investment Council (OIC) meeting, the OIC adopted a new Target-Date Fund (TDF) investment strategy for the Individual Account Program (IAP), effective January 1, 2018. This decision resulted in changes to the IAP investment structure by establishing TDFs in five-year vintages that reflect gradually more conservative investment mixes as a member ages.

As reported at the August 3, 2018 Board meeting, the OIC's move to TDFs continues to be integrated into IAP operations through project methodology.

### **BUDGET**

PERS presented a budget request to the September 2018 Emergency Board for resources to fully implement and manage the new and expanded processes associated with TDFs. After careful consideration, and in consultation with our budget analyst, PERS requested, and was granted, one permanent, full-time Accountant 4. This position will implement the accounting foundation to support the IAP and act as the primary, senior investment accountant for the TDF reporting model.

One additional full-time position was requested in the proposed 2019-2021 budget to assist the Operations Division with reconciling data received from Treasury.

After reviewing technology requirements for implementation of earnings crediting and a TDF history table, it was determined that the \$200,000 PERS was allocated earlier this year is sufficient for operations.

### **PROJECT ACTIVITIES**

- The critical tools needed for tracking TDF history and prior-year earnings will be complete by 12/31/18.
- All other tools and reports needed for TDF are in process and scheduled to be completed on time.
- Data transfers and processes between Voya and PERS continue to be reviewed for efficiency and accuracy. Adjustments will be made as needed.

## COMMUNICATIONS

PERS anticipates member questions and comments around the TDF change in Spring 2019, when 2018 Member Annual Statements will be mailed. This will be the first time for age-based TDF returns to be included in the statements. To answer some anticipated questions, an insert with IAP TDF information will be included with all 2018 Member Annual Statements. PERS has taken the following steps to highlight this investment change to members:

- Included articles in the December 2018 editions of *Perspectives* for active members regarding what they will see on their 2018 Member Annual Statements.
  - We also added a separate reminder article about the investment strategy change.
- Included an article in the December 2018 retiree edition of *Perspectives* reminding retirees:
  - with installment payments, that their IAP is invested in the Retirement Allocation Fund; and
  - for those who haven't "retired" from the IAP, we reminded them that they will receive information on their 2018 Member Annual Statement.
- Kept IAP TDF content front-and-center on the PERS home page. Total webpage views from May 1 through November 12 include:
  - 2,510 views of the original September 2017 two-page summary announcement.
  - 2,614 views of the original Q&A from September 2017.
  - 763 views of the news article announcing the House Bill 4159 implementation delay.
  - 461 views of the May 2018 annual statement flyer insert.
- Continuously updated the [IAP-Financials](#) page on the PERS website with monthly crediting rates, reminding members that non-retired members will only see annual investment returns on their 2018 Member Annual Statement.
- Shared Oregon State Treasury's Fall 2018 "[Invested for You](#)" newsletter, which included IAP TDF information, with 7,600 GovDelivery subscribers.

PERS staff will update the Board in May 2019 as project implementation comes to a conclusion.



# FINANCIAL MODELING

## OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

Presented by:

**Matt Larrabee, FSA, EA**

**Scott Preppernau, FSA, EA**

December 7, 2018

This work product was prepared for discussion purposes only and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Any recipient of this work product who desires professional guidance should engage qualified professionals for advice appropriate to its own specific needs.

# Introduction

- August: System-average valuation results
  - Calculated as of December 31, 2017 for the Tier 1/Tier 2 & OPSRP programs
- October: Employer-specific 2019-2021 contribution rates
  - Based on the December 31, 2017 actuarial valuation
- Today: Long-term financial modeling projections reflecting published investment results through October 31
  - System average contribution rates
  - System funded status
  - System unfunded actuarial liability (UAL)

# Models and Inputs

- System financials are projected using two different models
  - Steady return model – consistent year-to-year future investment returns
  - Variable return model – future investment returns vary from year to year
- Modeling starts with liabilities and actuarial assumptions from the 12/31/2017 system-wide actuarial valuation report
  - This includes the current Board-adopted 7.20% return assumption for valuing liabilities
- Modeling uses 12/31/2017 assets adjusted for published regular account returns of +1.51% through October 2018
  - Returns for November and December 2018 vary in our models based on scenario



# Financial Modeling

## Comments on System Average Rates

- Projections depict system average funded status and contribution rates
  - Comparable to system average rates shown in August 2018 presentation
- No single employer pays the system average rate
  - Contribution rates vary both by employer and by type of payroll
- Under most scenarios, the maximum rate increase allowed by the rate collar is anticipated for the 2021-2023 biennium
  - In addition to the increase for 2019-2021 adopted at the October meeting
  - Primarily driven by projected benefit changes from *Moro* Supreme Court decision
  - Reflects effect of investment underperformance through October 2018
- Rates shown do not include:
  - Contribution rates for the Individual Account Plan (IAP)
  - Employer contribution rates for the RHIA & RHIPA retiree healthcare programs
  - Debt service payments on employer-specific pension obligation bonds



# Steady Return Model with Current Rate-Setting Policy

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# Steady Return Model

## Current Rate Setting Structure

- The next four slides show financial projections under the current rate setting structure
  - Employer rates adjust each biennium, with changes limited by the rate collar
- Four scenarios for steady annual actual future investment return are shown
  - +5.0%; +6.7%; +7.2%; +9.0%
- While actual future returns won't be steady year-to-year, the steady return model clearly illustrates the financial dynamics
  - More realistic “noisy” future returns will be shown in the variable return model later in this presentation
  - The effects of near-term and/or long-term future returns worse than +5.0% are captured in the variable return model
- Model incorporates published returns through October 2018

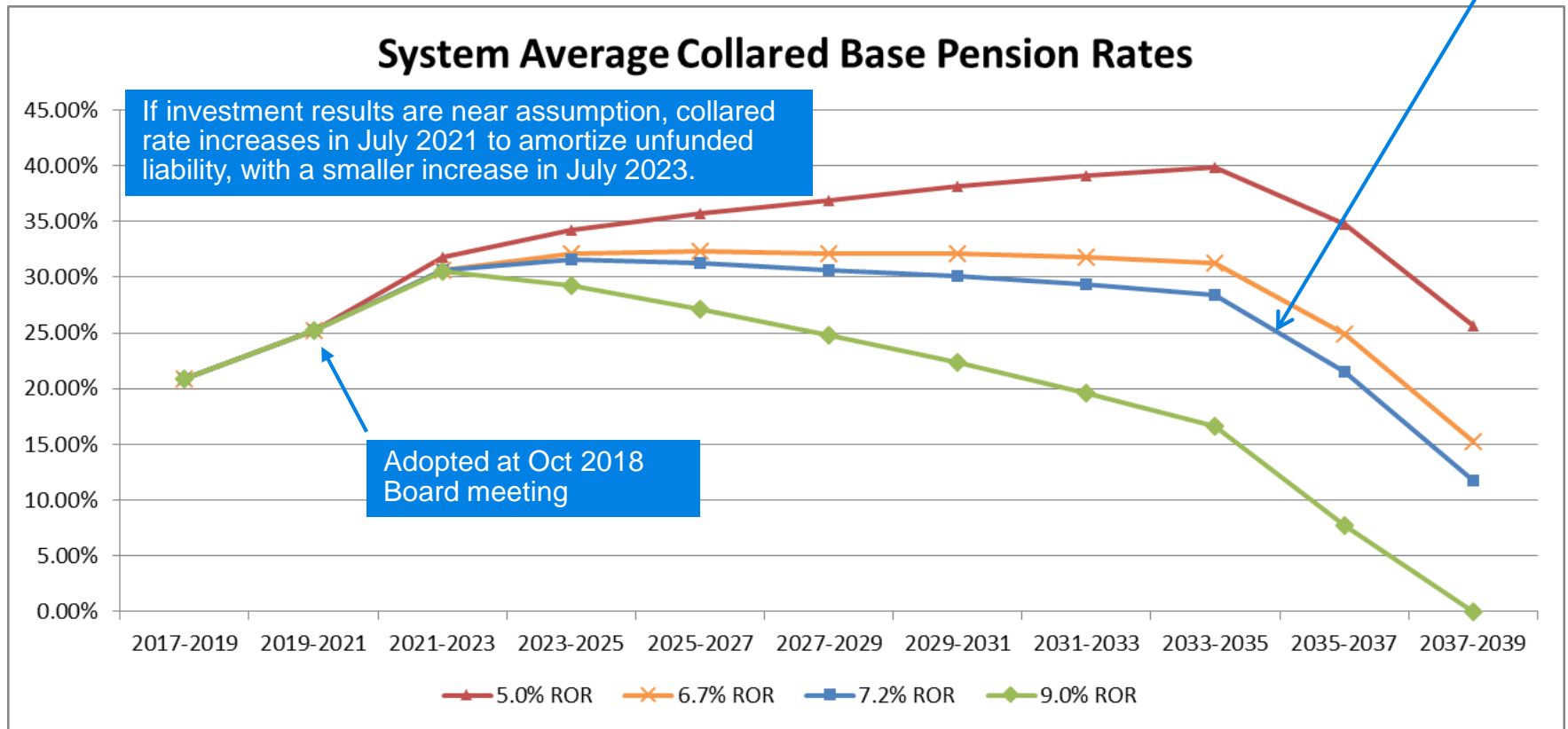
# Collared Base Pension Rates

## Current Rate Setting Structure

At assumed return:

- Rate declines after 2023-2025 as new OPSRP members replace retiring Tier 1/Tier 2 members
- Significant rate drops at 7/1/2035 after large portion of current UAL completes amortization

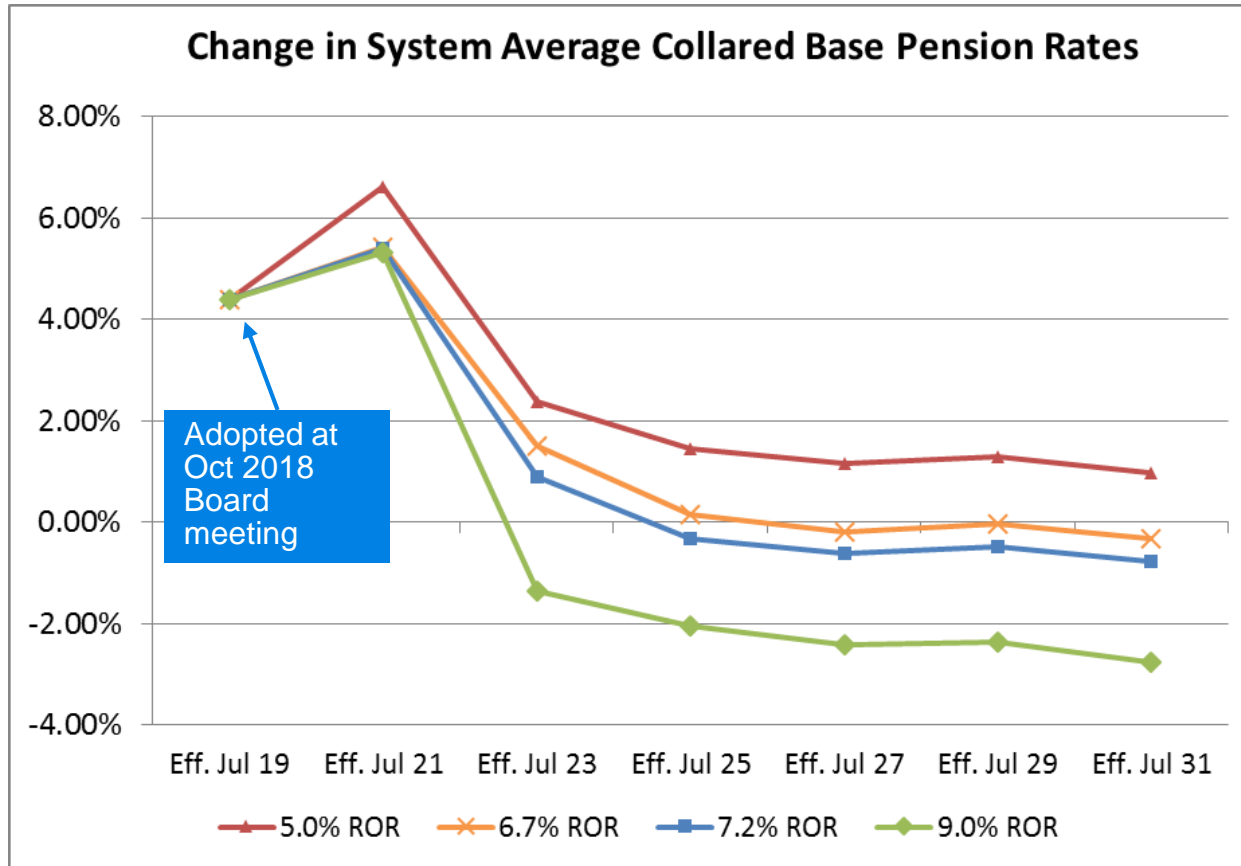
The steady return model illustrates impact of consistently achieving the assumed 7.20% return (blue line) and three alternative returns



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# Biennial Collared Base Rate Changes

## Current Rate Setting Structure



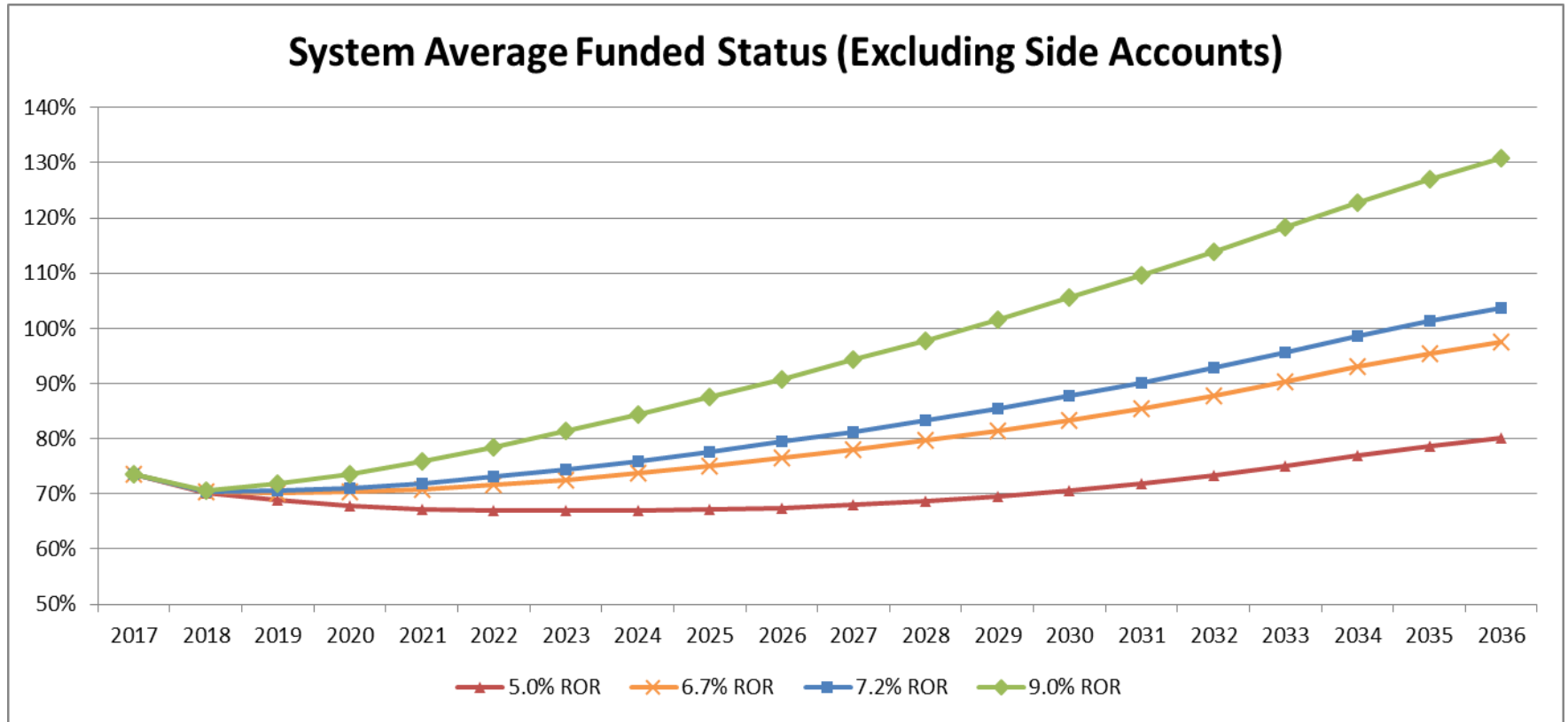
If actual investment returns are near assumption, base contribution increases of over 5.0% of payroll occur in the next biennium starting July 2021, with the increase being necessary to position the system to return to 100% funded status over 20 years if future experience follows assumptions

# System Funded Status

## Current Rate Setting Structure

Funded status declines at 12/31/2018 to reflect estimated 2018 underperformance. At 7.2% actual return, funded status then remains stable in initial years while rates are collared, before improving steadily.

Funded status reaches 100% in 2035 in the model when actual investment returns equal 7.2%

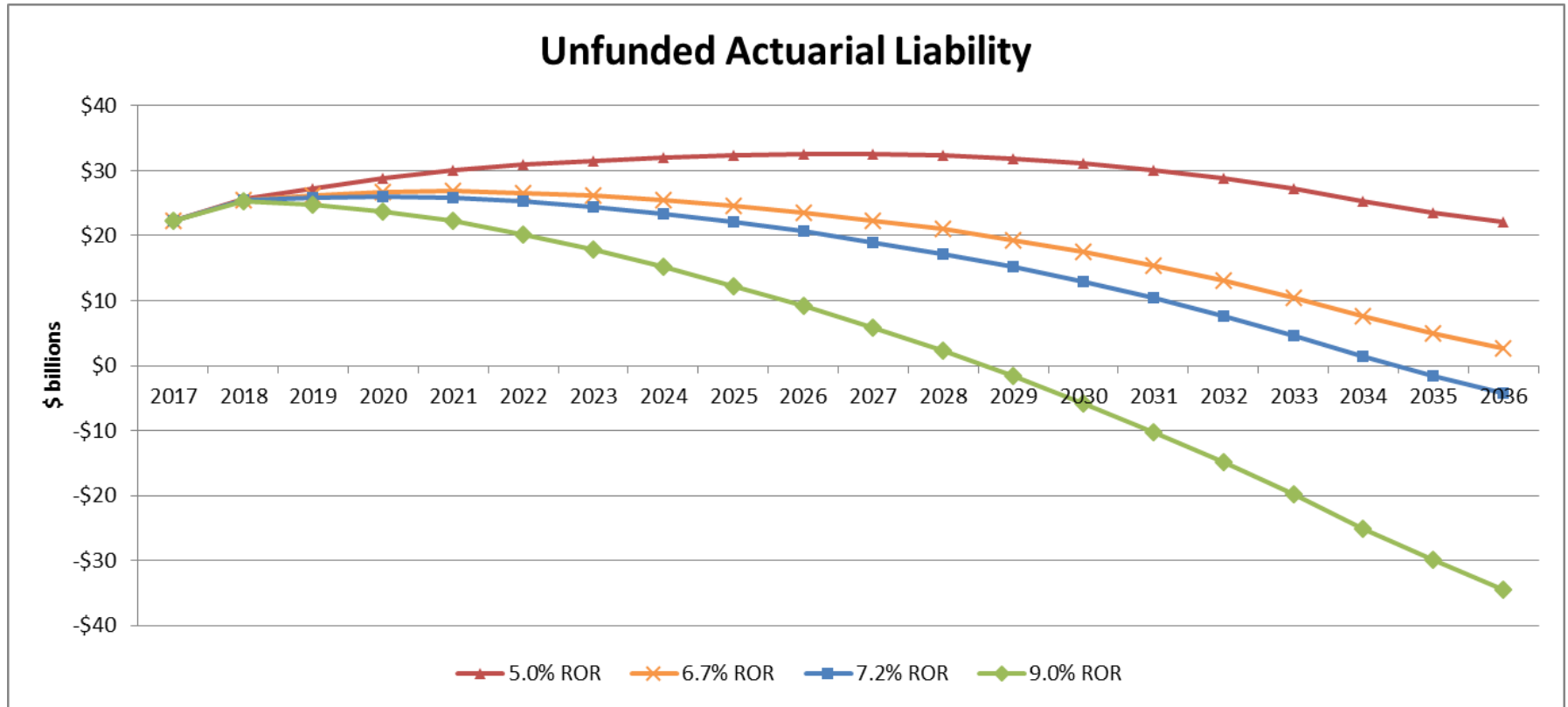


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# UAL (Unfunded Actuarial Liability)

## Current Rate Setting Structure

UAL in dollar terms increases at 12/31/2018 to reflect estimated 2018 underperformance. At a 7.2% actual return, UAL then grows slightly, before declining and being fully amortized by 2035.



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# Steady Return Model without Post-2017 Rate Increases

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# Steady Return Model

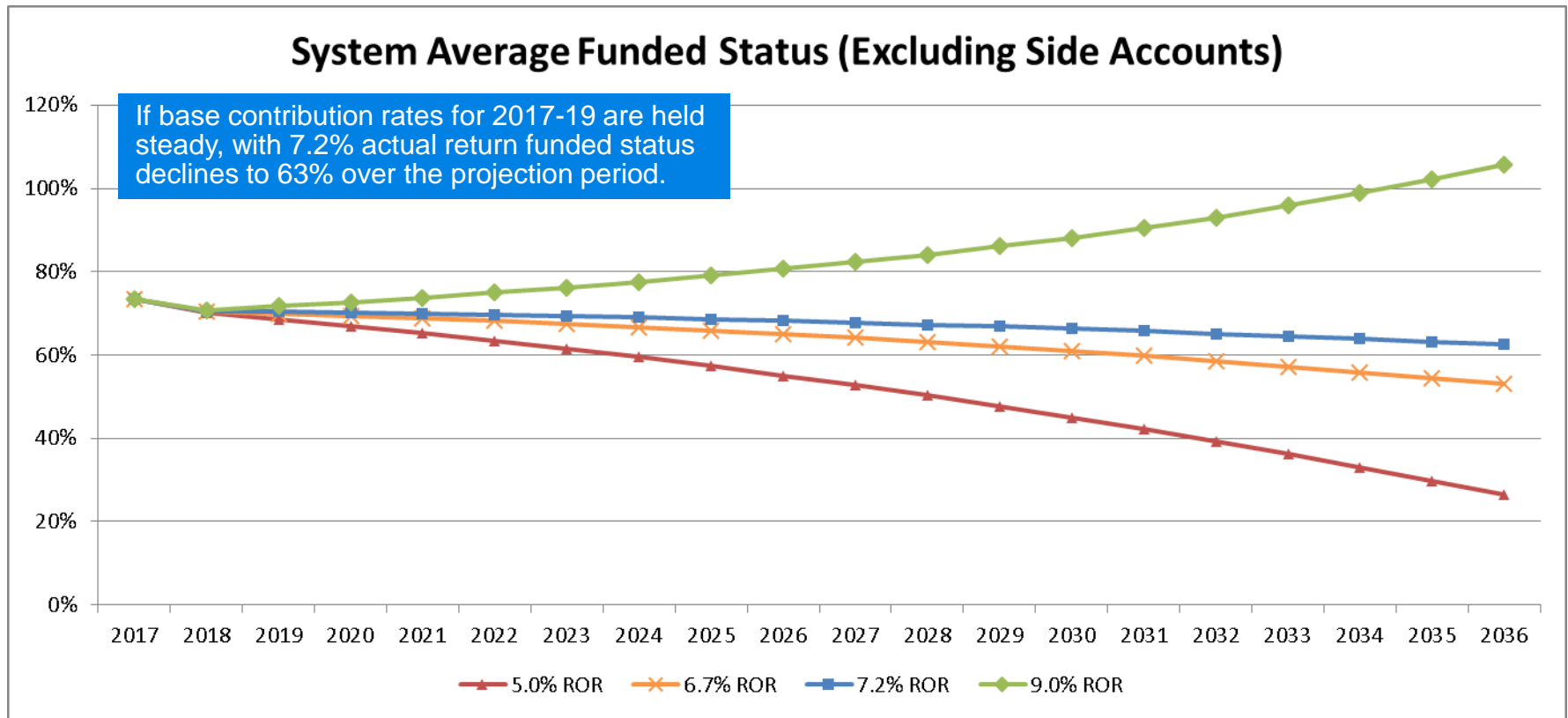
## Projections Absent Future Rate Increases

- Large contribution rate increases were adopted for 2019-2021 at the October 2018 meeting
- Our modeling in the prior section projects a large increase for the 2021-2023 biennium if actual returns are near or below assumption, or even if returns from November 1, 2018 to the end of December 31, 2019 are at an annualized rate of +9.0%
- In scenarios of future actual investment return experience near or below the current 7.20% assumption, the modeled increases are needed to allow funded status to systematically recover to 100% over time
- The following two slides project the long-term effects of not having future rate increases, including the already-adopted 2019-2021 increase
  - Illustrates the effect if the 2017-2019 collared base rates by payroll were held steady subsequent to the biennium, rather than applying the already-adopted increases in July 2019

# 2017-2019 Rates Held Steady

## Funded Status

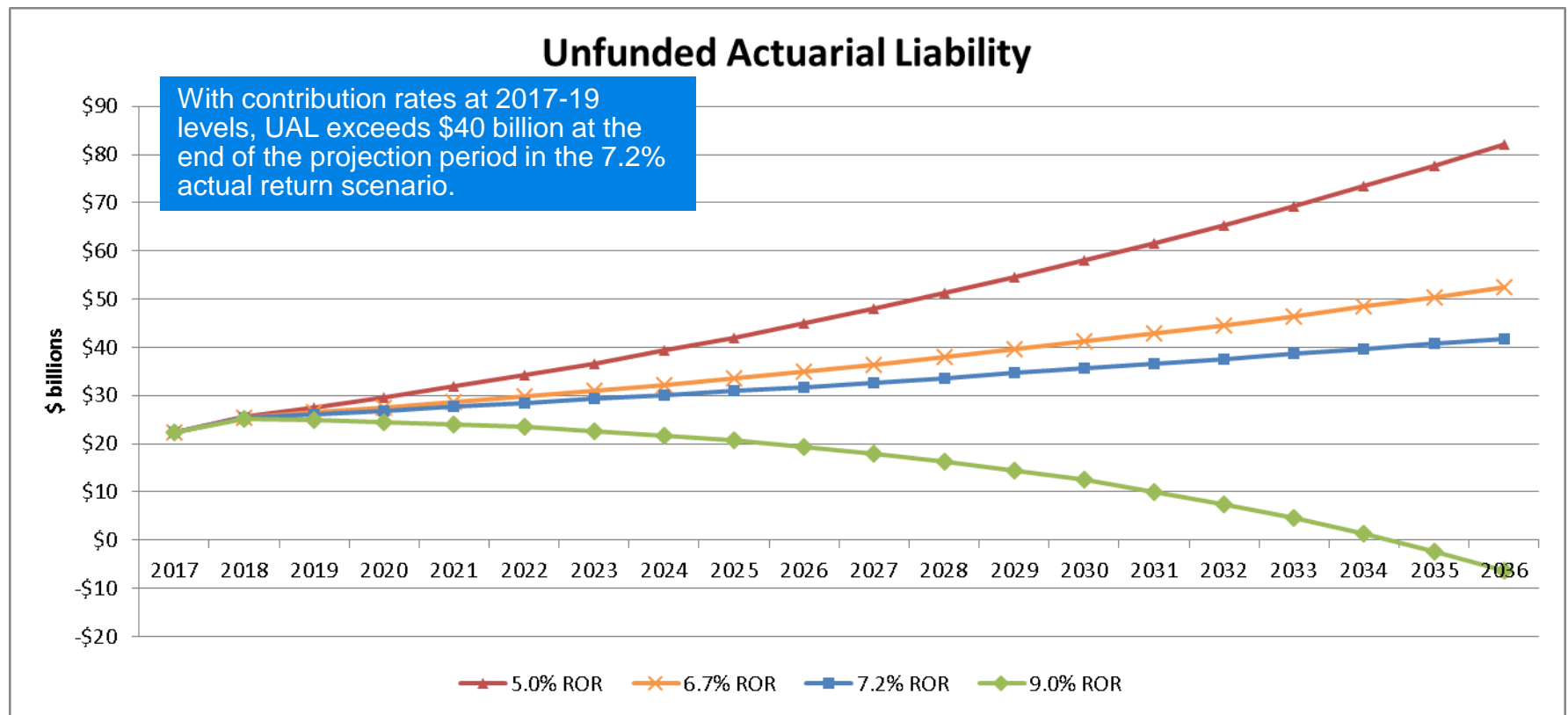
Shows projected funded status under steady return projections if collared base contribution rates remain at 2017-2019 levels subsequent to that biennium



# 2017-2019 Rates Held Steady

## UAL (Unfunded Actuarial Liability)

Shows projected UAL under steady return projections if collared base contribution rates remain at 2017-2019 levels subsequent to that biennium



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# Steady Return Model without Post-2019 Rate Increases

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# Steady Return Model

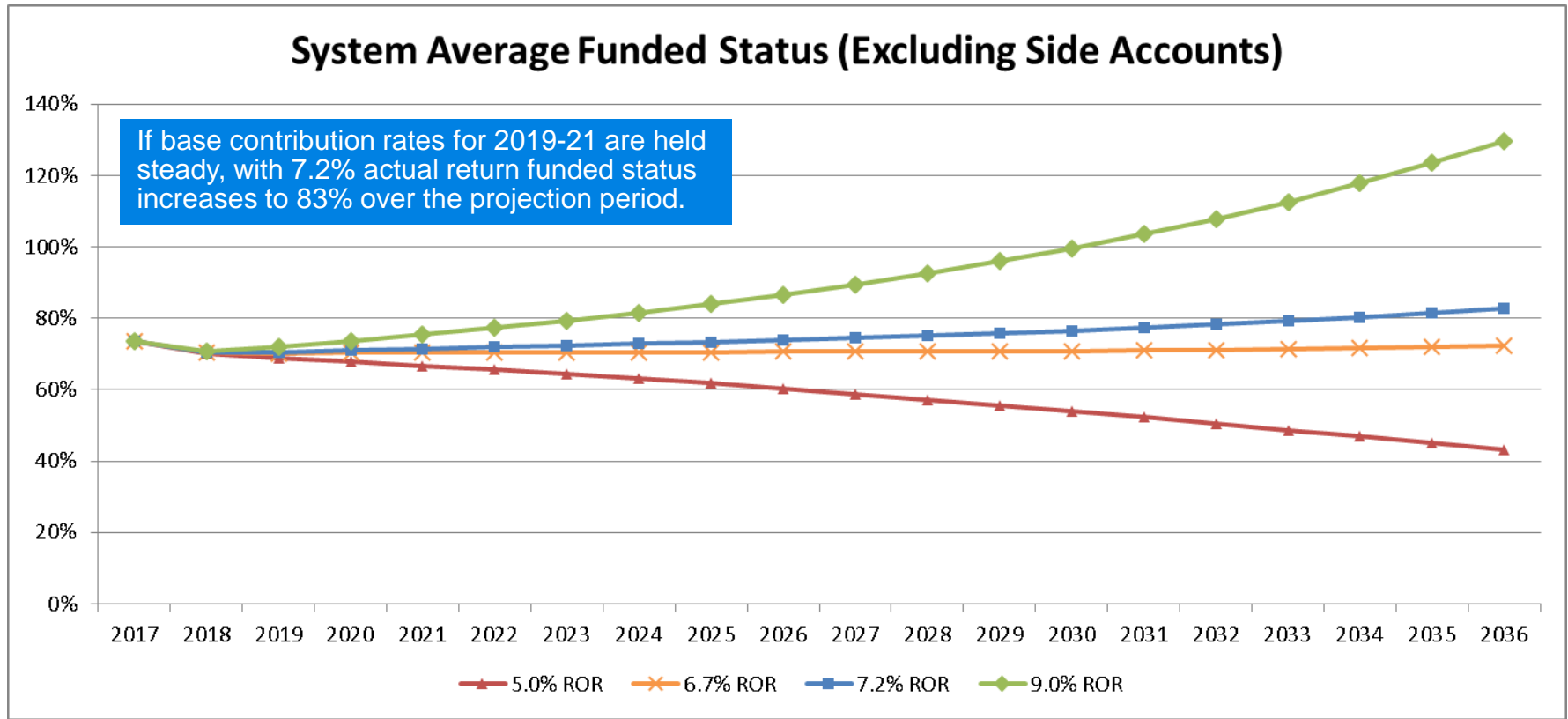
## Projections Absent Future Rate Increases Beyond 2019

- The prior section projects the effect on system funded status if the collared base rates were held steady at the 2017-2019 level
  - Illustrates a scenario where the July 2019 rates (adopted in October 2018) are not put into effect, and no subsequent rate changes are made in future biennia
- The following two slides project results if the already-adopted 2019-2021 collared base rates by payroll are put into effect, but then are held steady subsequent to that biennium, rather than having subsequent increases
  - This illustration assumes no additional sources of contribution other than employer rate contributions

# 2019-2021 Rates Held Steady

## Funded Status

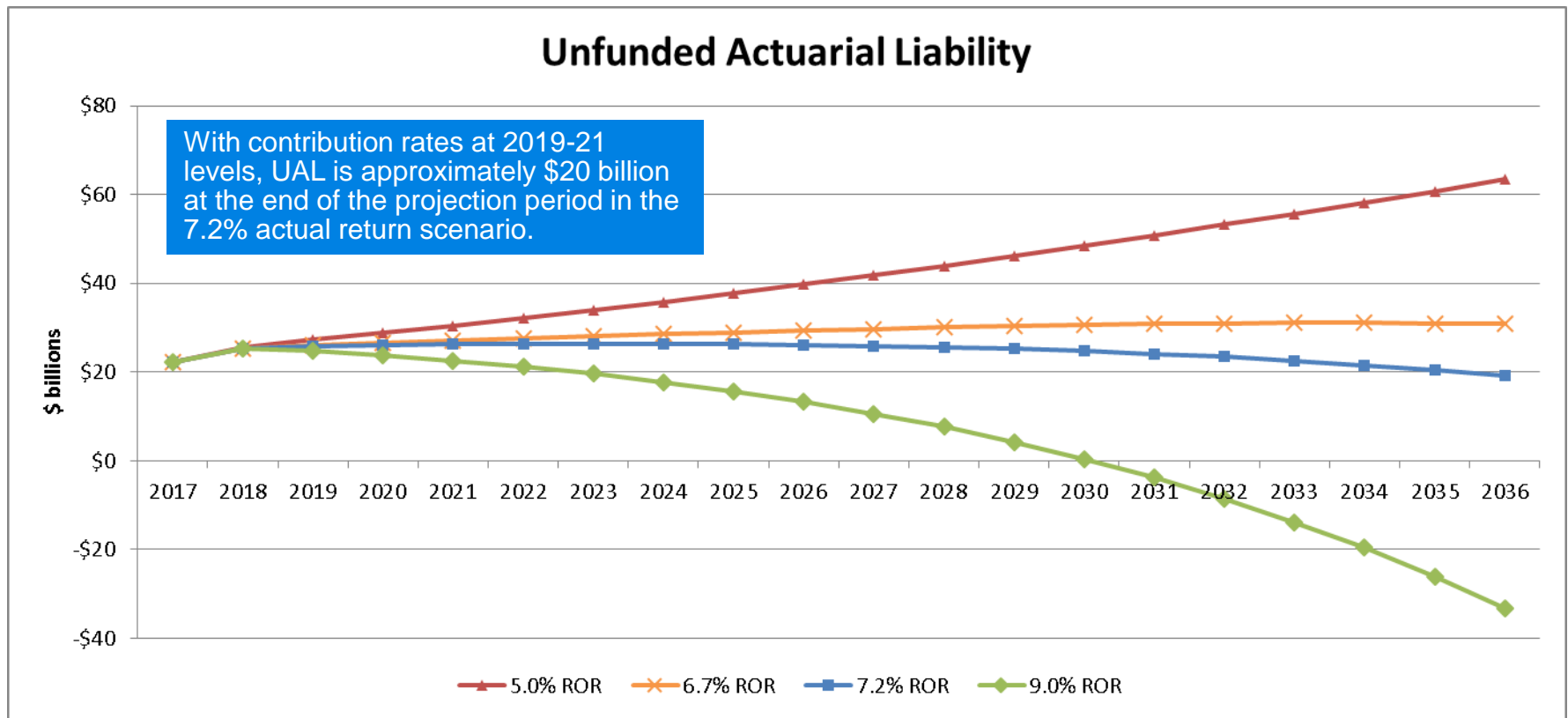
Shows projected funded status under steady return projections if collared base contribution rates remain at 2019-2021 levels subsequent to that biennium



# 2019-2021 Rates Held Steady

## UAL (Unfunded Actuarial Liability)

Shows projected UAL under steady return projections if collared base contribution rates remain at 2019-2021 levels subsequent to that biennium





# Variable Return Model

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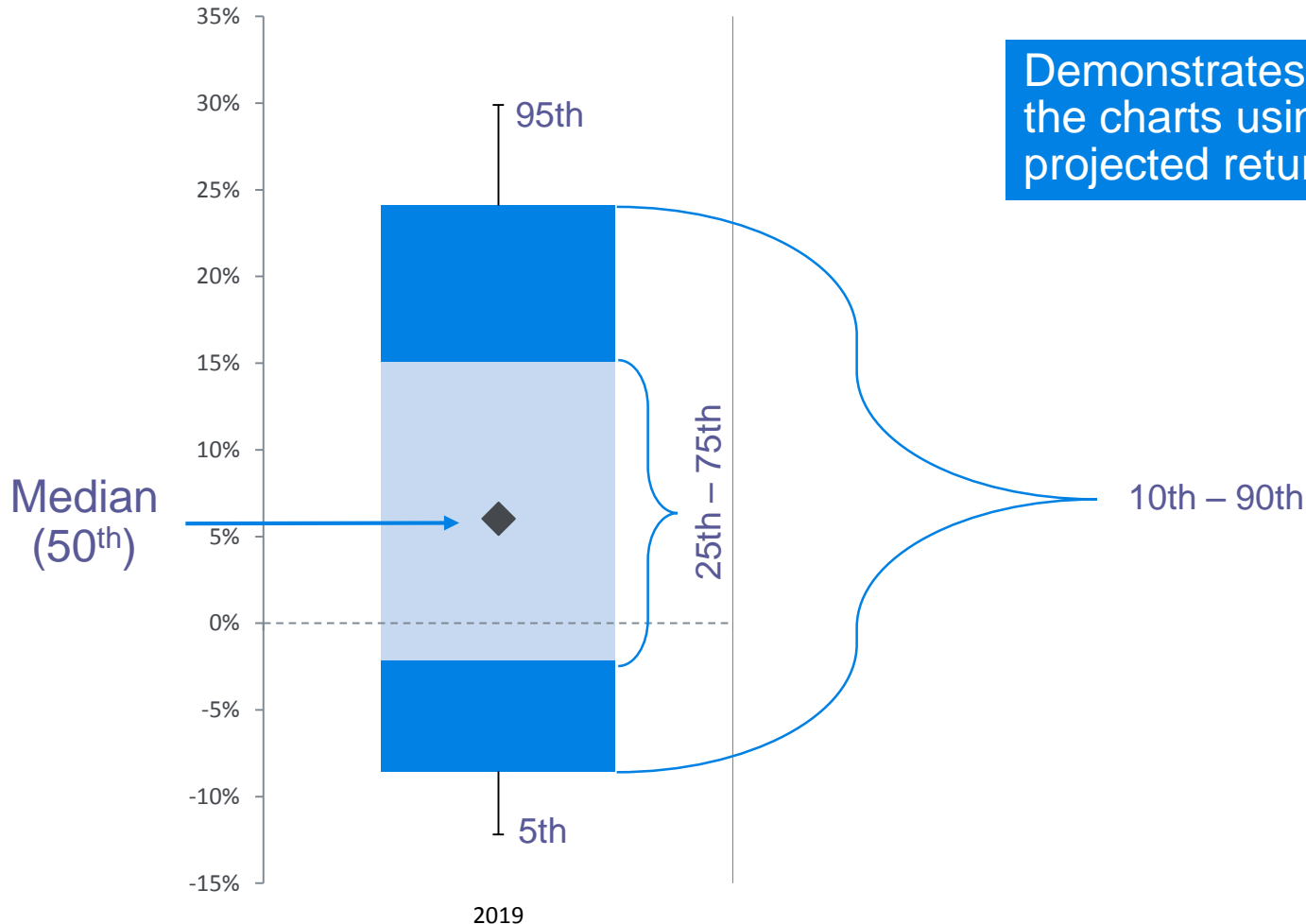


# Variable Return Model

- Model results are likelihood ranges instead of a single amount
  - The range's distribution is based on a stochastic simulation using 10,000 trials
  - Scenarios were developed by our national capital market specialists, and use the current OPERF target asset allocation policy; for these scenarios, the median annualized average geometric 20-year return is **6.65%**
    - When the PERS Board last reviewed the return assumption in July 2017, the median annualized future return was 6.70% using Milliman's capital market outlook assumptions
    - In that review, median 10-year annualized future returns using outlook assumptions of the two outside advisors to Oregon Investment Council ranged from 7.05% to 7.40%
  - Model incorporates published returns through October 2018
- In our results charts, the dots represent median (50<sup>th</sup> percentile) outcomes
- We display model results from the 5<sup>th</sup> to 95<sup>th</sup> percentiles
  - Ten percent of model outcomes fall outside of the depicted range
- The chart format is demonstrated on the next slide

# PERS Fund Rate of Return

## Projected 2019 Investment Returns



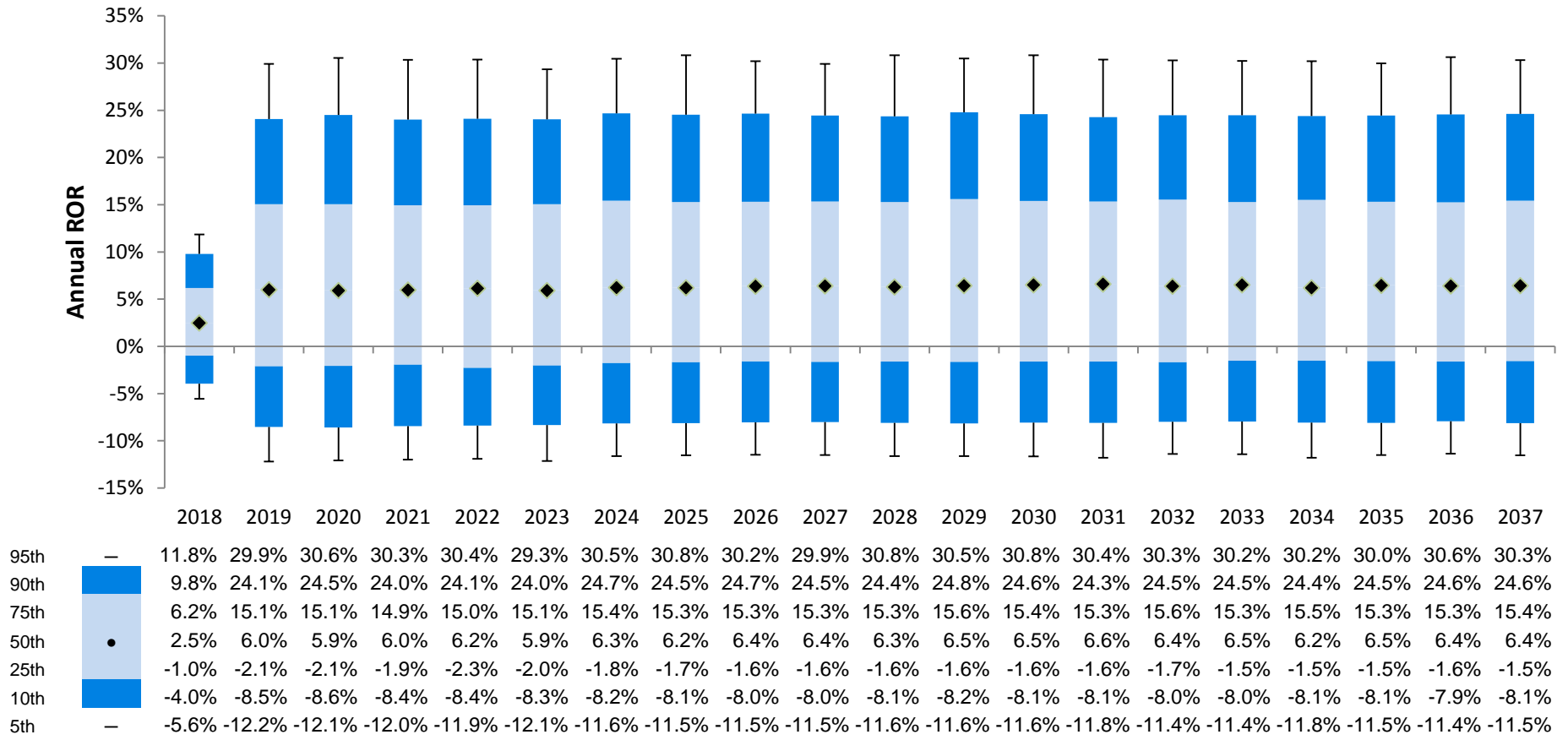
Demonstrates the format of the charts using single year projected returns in 2019.

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# PERS Fund Rate of Return

## Single Calendar Year Investment Returns

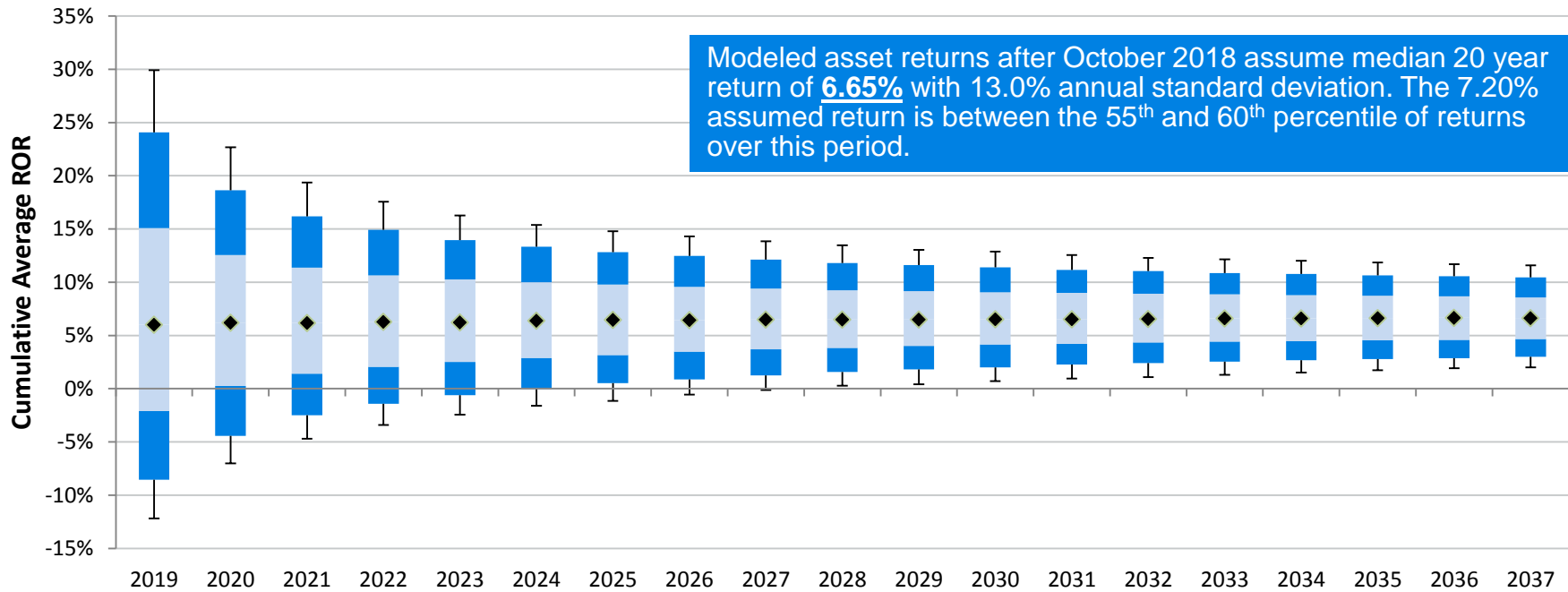
Our capital market outlook model projects lower median returns in the first five years following 2018 due to current low yields on fixed income. Higher median returns are projected in the latter portion of the modeling period.



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# Average Annualized Rate of Investment Return

## Post-2018 Modeled Returns (Geometric Average)

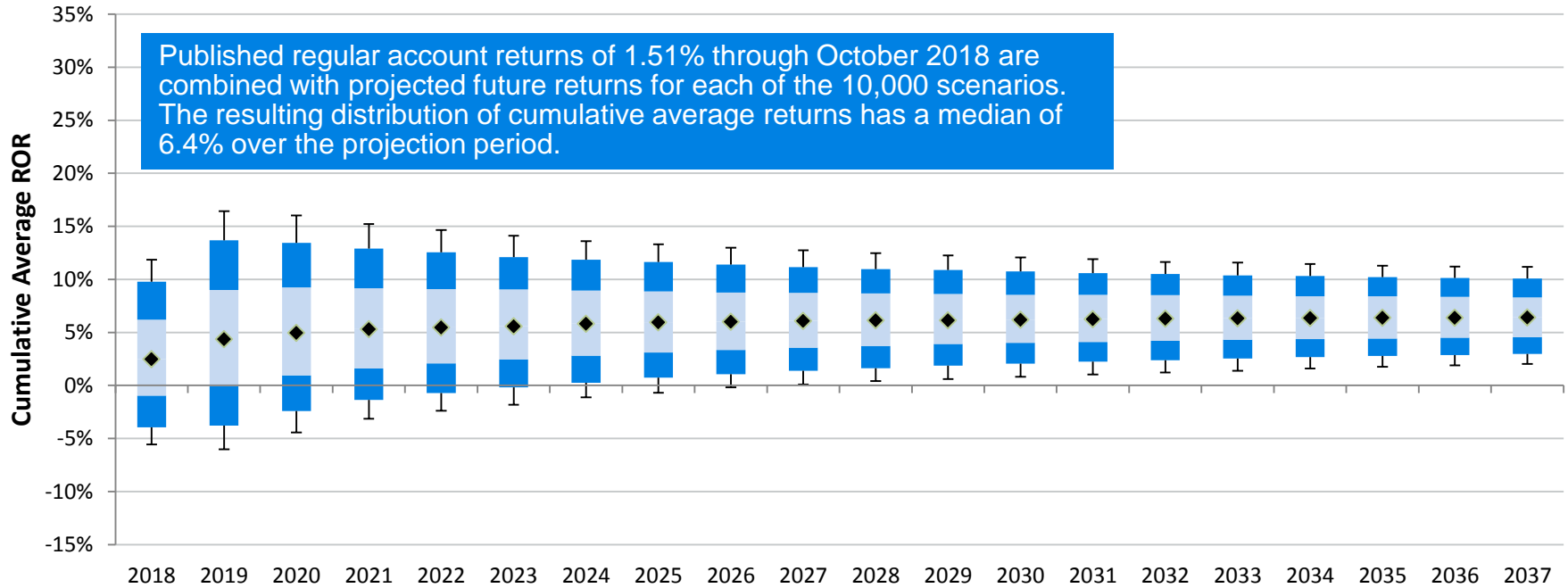


	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
95th	29.9%	22.7%	19.4%	17.6%	16.3%	15.4%	14.8%	14.3%	13.8%	13.5%	13.0%	12.9%	12.6%	12.3%	12.2%	12.0%	11.9%	11.7%	11.6%
90th	24.1%	18.6%	16.2%	14.9%	14.0%	13.3%	12.8%	12.5%	12.1%	11.8%	11.6%	11.4%	11.2%	11.1%	10.9%	10.8%	10.6%	10.6%	10.5%
75th	15.1%	12.6%	11.4%	10.7%	10.3%	10.0%	9.8%	9.6%	9.4%	9.2%	9.2%	9.1%	9.0%	8.9%	8.9%	8.8%	8.7%	8.7%	8.6%
50th	6.0%	6.2%	6.2%	6.3%	6.2%	6.4%	6.5%	6.4%	6.5%	6.5%	6.5%	6.5%	6.5%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%
25th	-2.1%	0.3%	1.4%	2.1%	2.5%	2.9%	3.2%	3.5%	3.7%	3.8%	4.0%	4.2%	4.2%	4.3%	4.4%	4.5%	4.6%	4.6%	4.7%
10th	-8.5%	-4.4%	-2.5%	-1.4%	-0.6%	0.0%	0.5%	0.9%	1.2%	1.6%	1.8%	2.0%	2.3%	2.4%	2.5%	2.7%	2.8%	2.9%	3.0%
5th	-12.2%	-7.0%	-4.7%	-3.4%	-2.4%	-1.6%	-1.2%	-0.5%	-0.1%	0.3%	0.4%	0.7%	1.0%	1.1%	1.3%	1.5%	1.7%	1.9%	2.0%

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# Average Annualized Rate of Investment Return

## Post-2017 Modeled Returns (Geometric Average)

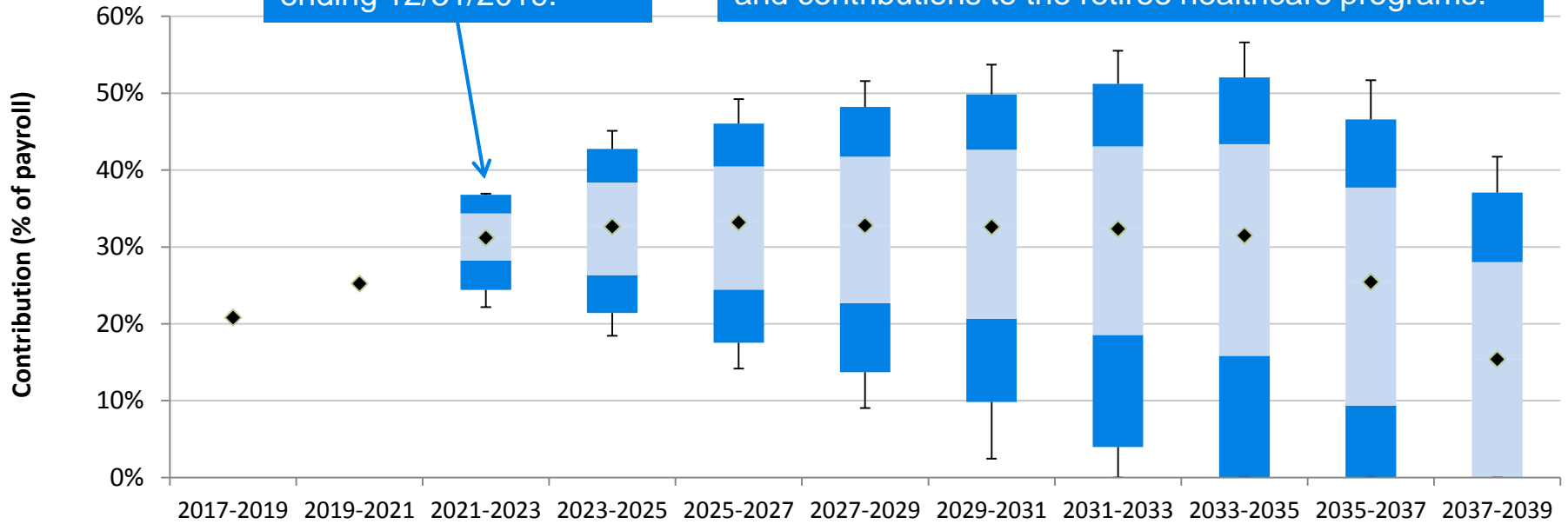


	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
95th	11.8%	16.4%	16.0%	15.2%	14.7%	14.1%	13.6%	13.3%	13.0%	12.7%	12.5%	12.2%	12.1%	11.9%	11.6%	11.6%	11.5%	11.3%	11.2%	11.2%
90th	9.8%	13.7%	13.5%	12.9%	12.6%	12.1%	11.8%	11.6%	11.4%	11.1%	11.0%	10.9%	10.7%	10.6%	10.5%	10.4%	10.3%	10.2%	10.1%	10.1%
75th	6.2%	9.0%	9.2%	9.2%	9.1%	9.1%	8.9%	8.9%	8.8%	8.7%	8.7%	8.6%	8.6%	8.5%	8.5%	8.5%	8.4%	8.4%	8.4%	8.3%
50th	2.5%	4.4%	5.0%	5.3%	5.5%	5.6%	5.8%	6.0%	6.0%	6.1%	6.1%	6.2%	6.2%	6.2%	6.3%	6.3%	6.4%	6.4%	6.4%	6.4%
25th	-1.0%	0.0%	1.0%	1.6%	2.1%	2.5%	2.8%	3.1%	3.3%	3.6%	3.7%	3.9%	4.0%	4.1%	4.2%	4.3%	4.4%	4.4%	4.5%	4.6%
10th	-4.0%	-3.8%	-2.4%	-1.4%	-0.7%	-0.2%	0.3%	0.7%	1.1%	1.4%	1.6%	1.9%	2.1%	2.2%	2.4%	2.5%	2.7%	2.8%	2.9%	3.0%
5th	-5.6%	-6.0%	-4.4%	-3.1%	-2.4%	-1.8%	-1.1%	-0.7%	-0.2%	0.1%	0.4%	0.6%	0.8%	1.0%	1.2%	1.4%	1.6%	1.8%	1.9%	2.0%

# System Average Collared Base Contribution Rates

Rates for 2021-2023 are based on the modeled returns for the period ending 12/31/2019.

“Base” rates are system average Tier 1/Tier 2/OPSRP contribution rates excluding IAP contributions, the effect of side accounts & pension bond debt service, and contributions to the retiree healthcare programs.



	2017-2019	2019-2021	2021-2023	2023-2025	2025-2027	2027-2029	2029-2031	2031-2033	2033-2035	2035-2037	2037-2039	
5th	—	20.8%	25.2%	36.9%	45.1%	49.2%	51.6%	53.7%	55.5%	56.6%	51.7%	41.7%
10th	—	20.8%	25.2%	36.8%	42.8%	46.0%	48.2%	49.8%	51.2%	52.1%	46.6%	37.1%
25th	—	20.8%	25.2%	34.4%	38.4%	40.5%	41.7%	42.7%	43.1%	43.4%	37.7%	28.0%
50th	—	20.8%	25.2%	31.2%	32.7%	33.2%	32.8%	32.6%	32.4%	31.5%	25.4%	15.4%
75th	—	20.8%	25.2%	28.2%	26.3%	24.4%	22.7%	20.7%	18.5%	15.8%	9.4%	0.0%
90th	—	20.8%	25.2%	24.4%	21.4%	17.5%	13.7%	9.8%	4.0%	0.0%	0.0%	0.0%
95th	—	20.8%	25.2%	22.2%	18.5%	14.2%	9.0%	2.5%	0.0%	0.0%	0.0%	0.0%

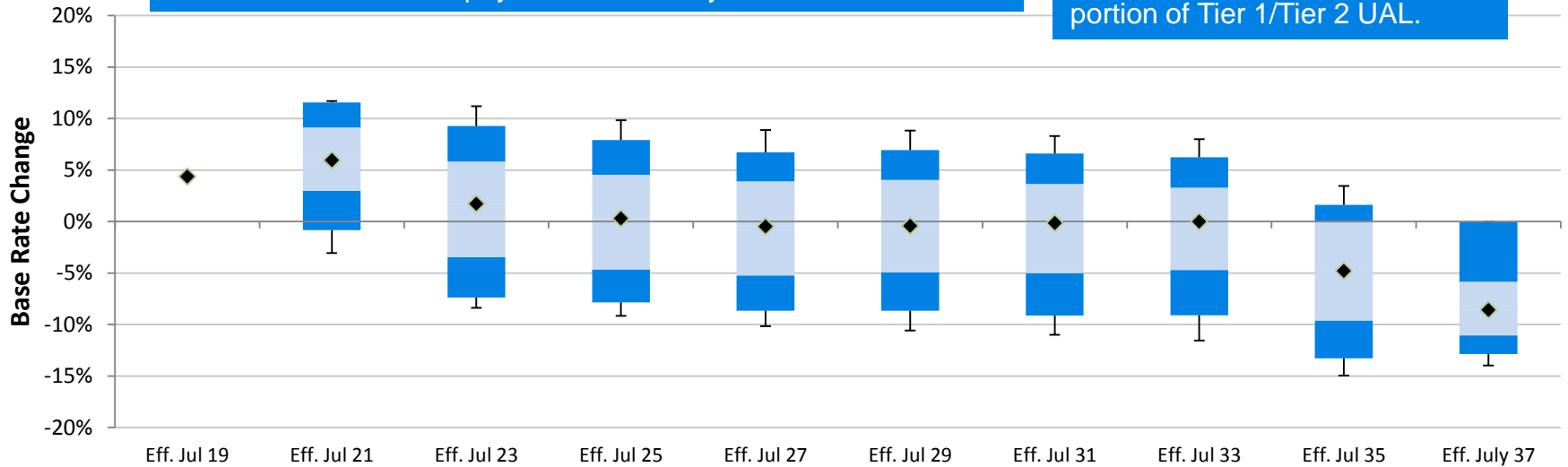
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# Biennial Collared Base Rate Changes

## System Average Rates

About 75% of modeled scenarios show base contribution rate increases above 3% of payroll effective July 2021.

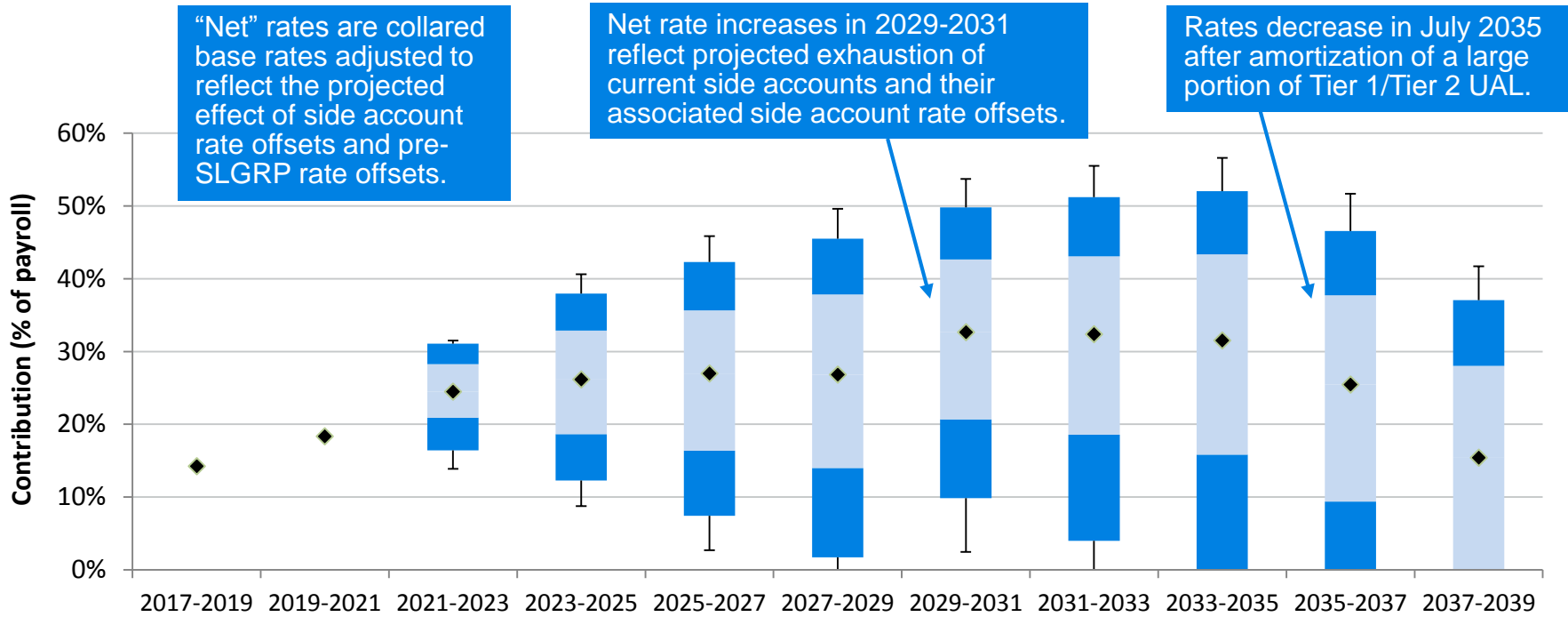
Rates decrease in July 2035 after amortization of a large portion of Tier 1/Tier 2 UAL.



	Eff. Jul 19	Eff. Jul 21	Eff. Jul 23	Eff. Jul 25	Eff. Jul 27	Eff. Jul 29	Eff. Jul 31	Eff. Jul 33	Eff. Jul 35	Eff. July 37	
5th	—	4.4%	11.7%	11.2%	9.8%	8.9%	8.8%	8.3%	8.0%	3.5%	0.0%
10th	—	4.4%	11.6%	9.3%	7.9%	6.7%	6.9%	6.6%	6.2%	1.6%	0.0%
25th	—	4.4%	9.1%	5.8%	4.5%	3.9%	4.0%	3.7%	3.3%	0.0%	-5.8%
50th	●	4.4%	6.0%	1.7%	0.3%	-0.5%	-0.4%	-0.1%	0.0%	-4.8%	-8.6%
75th	—	4.4%	3.0%	-3.5%	-4.7%	-5.2%	-4.9%	-5.0%	-4.7%	-9.6%	-11.0%
90th	—	4.4%	-0.8%	-7.4%	-7.9%	-8.7%	-8.7%	-9.1%	-9.1%	-13.3%	-12.8%
95th	—	4.4%	-3.1%	-8.4%	-9.2%	-10.2%	-10.6%	-11.0%	-11.6%	-14.9%	-14.0%

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# System Average Collared Net Contribution Rates



5th	—	14.2%	18.3%	31.5%	40.6%	45.8%	49.6%	53.7%	55.5%	56.6%	51.7%	41.7%
10th	■	14.2%	18.3%	31.1%	38.0%	42.3%	45.5%	49.8%	51.2%	52.1%	46.6%	37.1%
25th	■	14.2%	18.3%	28.3%	32.9%	35.7%	37.8%	42.7%	43.1%	43.4%	37.7%	28.0%
50th	●	14.2%	18.3%	24.5%	26.2%	27.0%	26.8%	32.6%	32.4%	31.5%	25.4%	15.4%
75th	■	14.2%	18.3%	20.9%	18.6%	16.4%	14.0%	20.7%	18.5%	15.8%	9.4%	0.0%
90th	■	14.2%	18.3%	16.4%	12.3%	7.4%	1.7%	9.8%	4.0%	0.0%	0.0%	0.0%
95th	—	14.2%	18.3%	13.9%	8.7%	2.7%	0.0%	2.5%	0.0%	0.0%	0.0%	0.0%

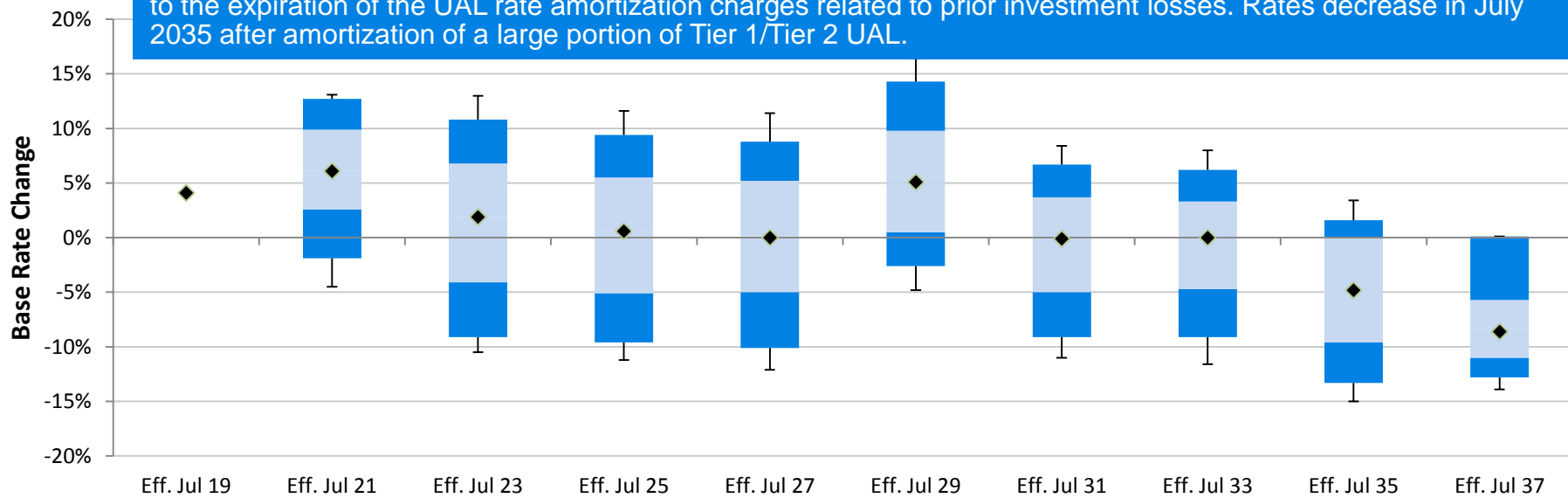
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# Biennial Collared Net Rate Changes

## System Average Rates

The July 2029 increase is related to the projected exhaustion of side accounts and pre-SLGRP rate offsets prior to the expiration of the UAL rate amortization charges related to prior investment losses. Rates decrease in July 2035 after amortization of a large portion of Tier 1/Tier 2 UAL.



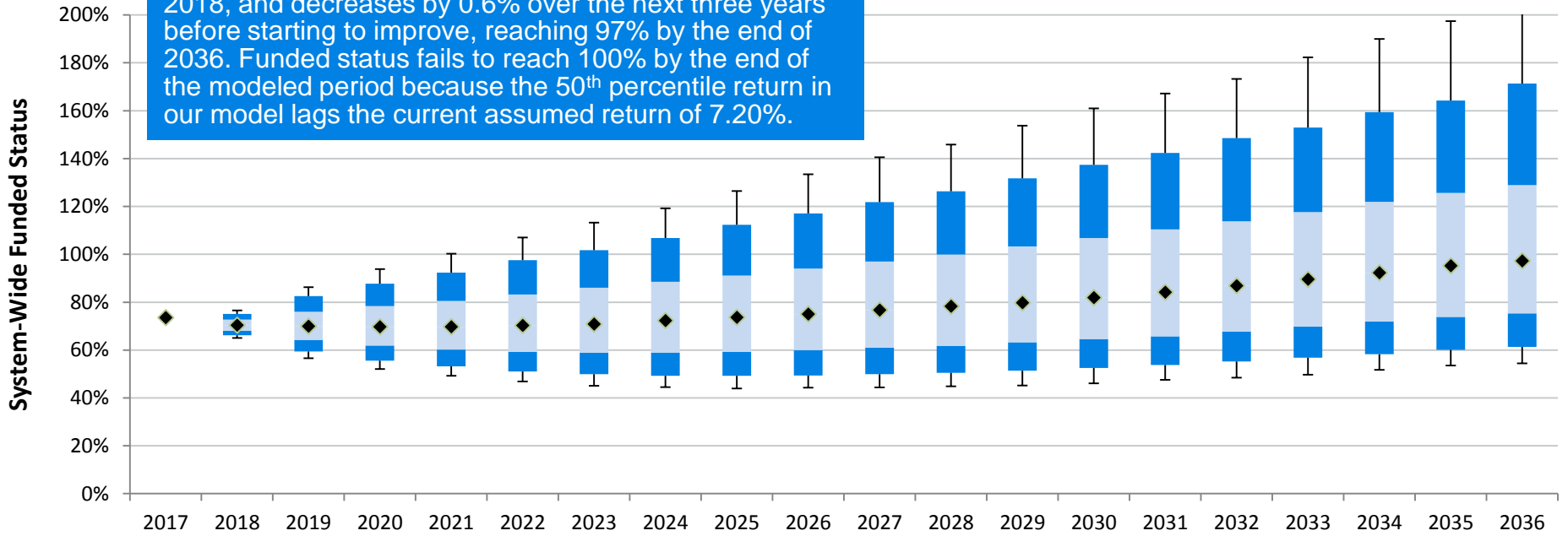
	Eff. Jul 19	Eff. Jul 21	Eff. Jul 23	Eff. Jul 25	Eff. Jul 27	Eff. Jul 29	Eff. Jul 31	Eff. Jul 33	Eff. Jul 35	Eff. Jul 37	
5th	—	4.1%	13.2%	12.9%	11.7%	11.2%	16.5%	8.3%	8.0%	3.5%	0.0%
10th	—	4.1%	12.8%	10.8%	9.5%	8.7%	14.4%	6.6%	6.2%	1.6%	0.0%
25th	—	4.1%	9.9%	6.8%	5.6%	5.1%	9.9%	3.7%	3.3%	0.0%	-5.8%
50th	•	4.1%	6.1%	1.9%	0.6%	0.0%	5.1%	-0.1%	0.0%	-4.8%	-8.6%
75th	—	4.1%	2.6%	-4.1%	-5.0%	-5.1%	0.6%	-5.0%	-4.7%	-9.6%	-11.0%
90th	—	4.1%	-1.9%	-9.1%	-9.6%	-10.1%	-2.6%	-9.1%	-9.1%	-13.3%	-12.8%
95th	—	4.1%	-4.5%	-10.5%	-11.2%	-12.1%	-4.8%	-11.0%	-11.6%	-14.9%	-14.0%



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# Funded Status (Excluding Side Accounts)

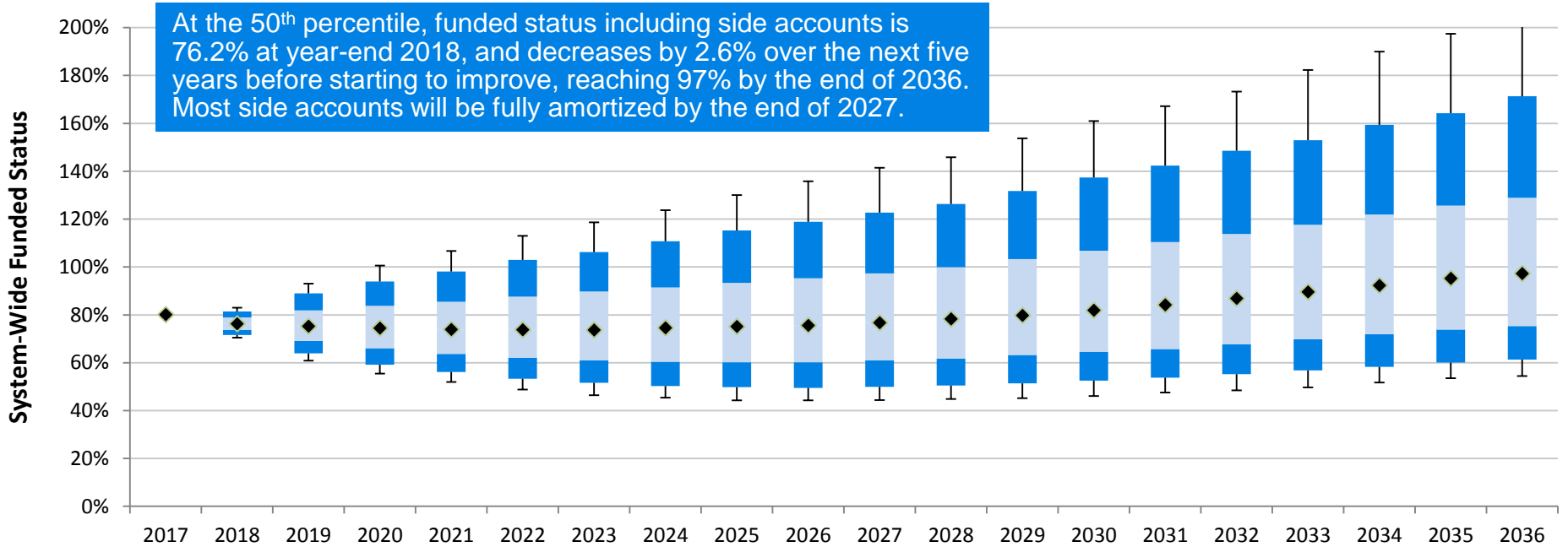
At the 50<sup>th</sup> percentile, funded status is 70.3% at year-end 2018, and decreases by 0.6% over the next three years before starting to improve, reaching 97% by the end of 2036. Funded status fails to reach 100% by the end of the modeled period because the 50<sup>th</sup> percentile return in our model lags the current assumed return of 7.20%.



	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
95th	—	73.5%	76.5%	86.3%	93.8%	100.2%	107.1%	113.2%	119.2%	126.4%	133.5%	140.5%	145.8%	153.8%	161.0%	167.1%	173.2%	182.3%	190.0%	197.4%	205.5%
90th	—	73.5%	75.1%	82.5%	87.7%	92.3%	97.6%	101.7%	106.8%	112.3%	117.0%	121.9%	126.4%	131.8%	137.4%	142.3%	148.6%	152.9%	159.4%	164.2%	171.3%
75th	—	73.5%	72.8%	76.0%	78.3%	80.5%	83.2%	86.1%	88.5%	91.2%	94.0%	97.0%	99.9%	103.3%	106.8%	110.4%	113.8%	117.7%	121.9%	125.7%	128.9%
50th	●	73.5%	70.3%	69.9%	69.6%	69.7%	70.2%	70.8%	72.3%	73.7%	74.9%	76.7%	78.2%	79.8%	81.8%	84.1%	86.9%	89.6%	92.3%	95.2%	97.2%
25th	—	73.5%	68.1%	64.3%	61.9%	60.2%	59.3%	58.9%	59.0%	59.3%	60.0%	60.9%	61.8%	63.2%	64.6%	65.7%	67.7%	69.8%	72.0%	73.8%	75.3%
10th	—	73.5%	66.1%	59.4%	55.5%	53.2%	51.1%	49.9%	49.2%	49.3%	49.4%	50.0%	50.5%	51.4%	52.5%	53.8%	55.2%	56.8%	58.3%	60.1%	61.3%
5th	—	73.5%	65.0%	56.6%	52.0%	49.2%	46.9%	45.1%	44.6%	43.9%	44.3%	44.4%	44.8%	45.2%	46.1%	47.6%	48.5%	49.7%	51.7%	53.5%	54.4%

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# Funded Status (Including Side Accounts)

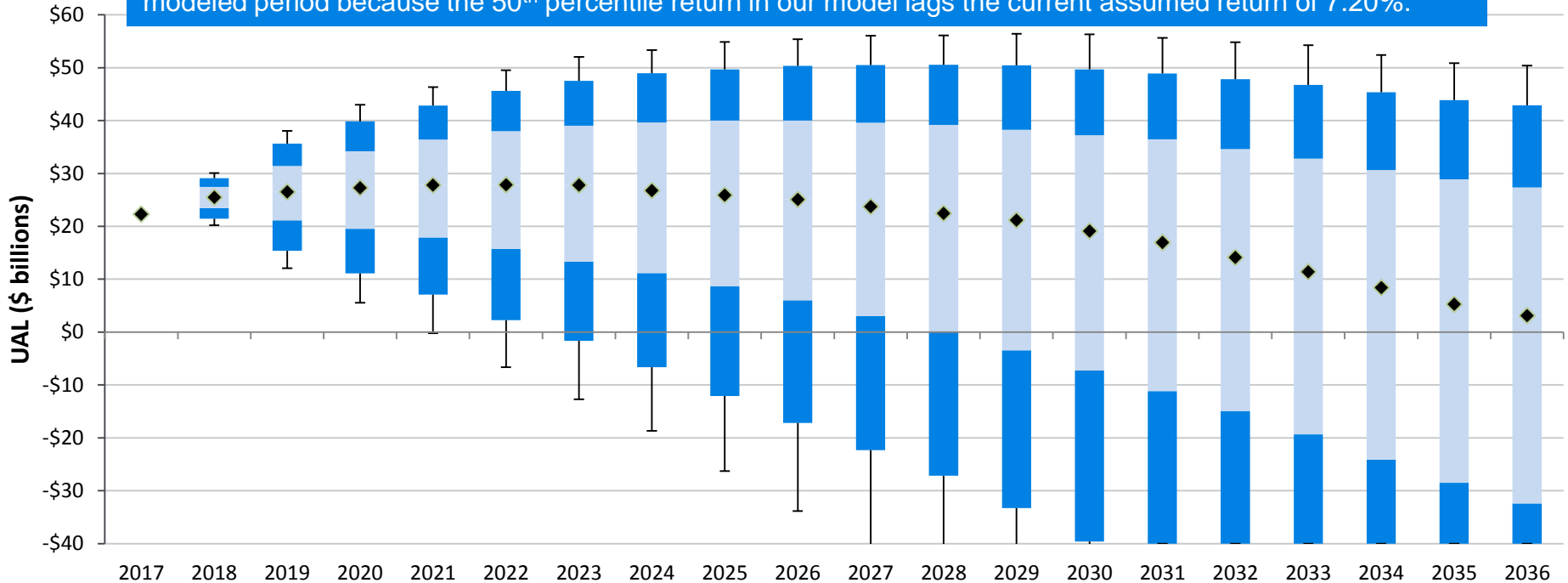


	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
95th	—	80.1%	83.0%	93.1%	100.6%	106.6%	113.0%	118.7%	123.7%	130.0%	135.9%	141.4%	145.8%	153.8%	161.0%	167.1%	173.2%	182.3%	190.0%	197.4%	205.5%
90th		80.1%	81.5%	89.0%	93.9%	98.1%	102.9%	106.3%	110.8%	115.2%	118.9%	122.7%	126.4%	131.8%	137.4%	142.3%	148.6%	152.9%	159.4%	164.2%	171.3%
75th		80.1%	78.9%	81.9%	83.8%	85.5%	87.6%	89.8%	91.5%	93.4%	95.2%	97.3%	99.9%	103.3%	106.8%	110.4%	113.8%	117.7%	121.9%	125.7%	128.9%
50th	•	80.1%	76.2%	75.2%	74.4%	73.9%	73.7%	73.6%	74.5%	75.1%	75.6%	76.7%	78.2%	79.8%	81.8%	84.1%	86.9%	89.6%	92.3%	95.2%	97.2%
25th		80.1%	73.7%	69.1%	66.1%	63.7%	62.1%	61.0%	60.4%	60.2%	60.3%	60.9%	61.8%	63.2%	64.6%	65.7%	67.7%	69.8%	72.0%	73.8%	75.3%
10th		80.1%	71.6%	63.9%	59.2%	56.1%	53.3%	51.6%	50.3%	49.8%	49.5%	50.0%	50.5%	51.4%	52.5%	53.8%	55.2%	56.8%	58.3%	60.1%	61.3%
5th	—	80.1%	70.4%	60.9%	55.4%	52.0%	48.8%	46.4%	45.4%	44.3%	44.3%	44.4%	44.8%	45.2%	46.1%	47.6%	48.5%	49.7%	51.7%	53.5%	54.4%

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# UAL (Excluding Side Accounts)

At the 50<sup>th</sup> percentile, the UAL excluding side accounts is \$25.5 billion at year-end 2018, grows to \$27.9 billion at the end of 2022, then declines to \$3.1 billion by the end of 2036. UAL fails to reach \$0 by the end of the modeled period because the 50<sup>th</sup> percentile return in our model lags the current assumed return of 7.20%.

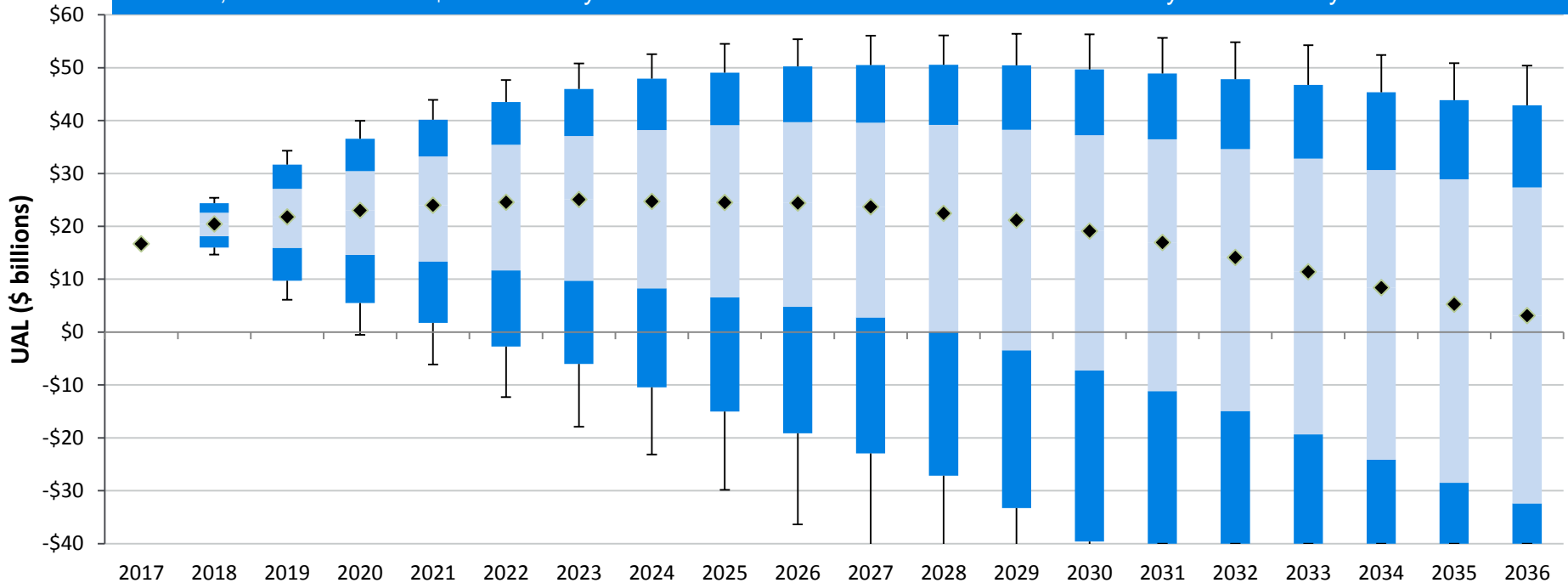


	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
5th	—	22.3	30.1	38.1	43.0	46.3	49.5	52.1	53.3	54.8	55.4	56.1	56.1	56.4	56.3	55.6	54.8	54.3	52.4	50.8	50.4
10th	—	22.3	29.1	35.6	39.8	42.8	45.6	47.5	49.0	49.7	50.3	50.5	50.5	50.4	49.7	48.9	47.8	46.7	45.3	43.9	42.9
25th	—	22.3	27.5	31.4	34.2	36.4	38.0	39.1	39.7	40.0	40.0	39.6	39.2	38.2	37.2	36.4	34.6	32.8	30.7	28.9	27.3
50th	•	22.3	25.5	26.5	27.3	27.8	27.9	27.8	26.8	25.9	25.1	23.7	22.5	21.2	19.1	17.0	14.1	11.4	8.4	5.3	3.1
75th	—	22.3	23.4	21.1	19.5	17.9	15.7	13.3	11.1	8.7	6.0	3.0	0.1	-3.4	-7.3	-11.2	-14.9	-19.3	-24.1	-28.5	-32.4
90th	—	22.3	21.4	15.4	11.1	7.1	2.3	-1.7	-6.7	-12.1	-17.2	-22.3	-27.1	-33.3	-39.6	-45.4	-52.6	-57.7	-65.5	-71.5	-80.3
95th	—	22.3	20.2	12.1	5.5	-0.2	-6.6	-12.7	-18.7	-26.3	-33.9	-41.5	-47.7	-56.3	-64.9	-71.9	-79.2	-90.0	-99.3	-109.1	-118.8

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# UAL (Including Side Accounts)

At the 50<sup>th</sup> percentile, the UAL including side accounts is \$20.5 billion at year-end 2018, grows to \$25.1 billion at the end of 2023, then declines to \$3.1 billion at the end of 2036. Most side accounts will be fully amortized by the end of 2027.



	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
5th	—	16.7	25.4	34.3	39.9	43.9	47.7	50.8	52.5	54.5	55.4	56.1	56.1	56.4	56.3	55.6	54.8	54.3	52.4	50.8	50.4
10th	—	16.7	24.3	31.7	36.6	40.1	43.5	46.0	47.9	49.1	50.2	50.5	50.5	50.4	49.7	48.9	47.8	46.7	45.3	43.9	42.9
25th	—	16.7	22.6	27.1	30.4	33.2	35.4	37.1	38.2	39.1	39.7	39.6	39.2	38.2	37.2	36.4	34.6	32.8	30.7	28.9	27.3
50th	●	16.7	20.5	21.8	23.0	24.0	24.6	25.1	24.7	24.5	24.4	23.7	22.5	21.2	19.1	17.0	14.1	11.4	8.4	5.3	3.1
75th	—	16.7	18.2	16.0	14.6	13.4	11.7	9.7	8.3	6.6	4.8	2.8	0.1	-3.4	-7.3	-11.2	-14.9	-19.3	-24.1	-28.5	-32.4
90th	—	16.7	16.0	9.7	5.5	1.8	-2.7	-6.0	-10.4	-15.0	-19.1	-22.9	-27.1	-33.3	-39.6	-45.4	-52.6	-57.7	-65.5	-71.5	-80.3
95th	—	16.7	14.7	6.1	-0.5	-6.1	-12.3	-17.9	-23.1	-29.8	-36.4	-42.3	-47.7	-56.3	-64.9	-71.9	-79.2	-90.0	-99.3	-109.1	-118.8

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# Variable Return Model Stress Test

- As in recent years, we also used the variable return model to do a “stress test” of the likelihood of certain events in the 10,000 scenarios modeled
- The likelihood of specified events occurring at some point during the 20-year projection period is shown below

Likelihood of Event Occurring at Some Point in Next 20 Years	
Funded Status (Excluding Side Accounts) > 100%	64%
Funded Status (Excluding Side Accounts) < 60%	58%
Funded Status (Excluding Side Accounts) < 40%	8%

# Variable Return Model Stress Test

- The likelihood of specified events occurring at some point during the 20 year projection period is shown below

Likelihood of Event Occurring at Some Point in Next 20 Years	
Base Rate (Excluding Retiree Healthcare) < 10% of Pay	41%
Base Rate (Excluding Retiree Healthcare) > 30% of Pay	86%
Base Rate (Excluding Retiree Healthcare) > 40% of Pay	51%

- The system-average base rate for the 2019-2021 biennium is between 25% and 26%, per the December 31, 2017 valuation

# Variable Return Model Stress Test

- As shown earlier, about 75% of modeled scenarios show an increase in the collared rate above 3% of payroll at July 2021
- Table shows likelihood in the model of a collared rate increase exceeding a selected threshold at the July 2021 rate change

<b>Likelihood of the July 2021 Collared Rate Increase Exceeding Threshold</b>		
<u>Threshold Increase</u>	<u>Base Rate</u>	<u>Net Rate</u>
3% of Pay	75%	73%
4% of Pay	69%	67%
5% of Pay	62%	62%
6% of Pay	50%	51%



# Variable Return Model Stress Test

- Likelihood in the model of cumulative July 2021 and July 2023 collared rate increases exceeding a selected threshold
  - For example, a scenario with increases of 4% of pay at July 2021 and 2% of pay in July 2023 would reach the 6% of pay cumulative threshold

Likelihood of Cumulative July 2021 and July 2023 Collared Rate Increases Exceeding Threshold		
<u>Threshold Increase</u>	<u>Base Rate</u>	<u>Net Rate</u>
6% of Pay	56%	56%
8% of Pay	48%	49%
10% of Pay	39%	42%
12% of Pay	30%	34%

## Wrap Up / Next Steps

- At the February meeting, preliminary year-end 2018 investment results will be available
  - We can then comment as warranted on estimated impact on the 12/31/2018 actuarial valuation results, which will develop advisory 2021 – 2023 contribution rates



# Appendix

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# Certification

This presentation summarizes deterministic and stochastic modeling for the Oregon Public Employees Retirement System (“PERS” or “the System”) over a 20 year period beginning December 31, 2017 under a wide range of potential economic scenarios. The results are based upon the same assumptions, methods, and plan provisions as described in the December 31, 2017 System-Wide Actuarial Valuation Report, except where noted otherwise.

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 other 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.

# Certification

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.

Milliman's work is prepared solely for the internal business use of the Oregon Public Employees Retirement System. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product.

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 pension 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.

# Appendix

## 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 Valuation Report.

Assets as of December 31, 2017, were based on values provided by Oregon PERS reflecting the Board's earnings crediting decisions for 2017, as shown in the Valuation Report. Financial model projections reflect October 31, 2018 investment results for regular and variable accounts as published by Oregon State Treasury.

### 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.

*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.

# Appendix

## Actuarial Basis

### Methods / Policies (cont'd)

*Expenses:* Annual administration expenses are assumed to be \$37.5M for Tier 1/Tier 2 and \$6.5M for OPSRP, as described in the 2016 Experience Study Report, and are added to the corresponding normal cost for the year in which they are incurred. Administration expenses for each year after 2018 are assumed to increase with inflation, which varies by scenario based on capital market assumptions.

*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 Report.

### Provisions

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

# Appendix

## Rate Projection Basis

### Assumptions

In general, all assumptions are as described in the 2016 Experience Study Report.

The major actuarial valuation assumptions used in our projections are shown below. They are aggregate average assumptions that apply to the whole population and were held constant throughout the projection period. The economic experience adjustments were allowed to vary in future years given the conditions defined in each economic scenario.

- Valuation interest rate – 7.20%
- Tier 1 Regular account growth – 7.20%
- Actual fund investment return – Varies by scenario according to capital market assumptions
- Variable account growth – Equal to investment return on public equity portion of the fund
- Inflation assumption – 2.50%
- Inflation experience – Varies by scenario according to capital market assumptions
- Wage growth assumption – 3.50%
- Wage growth experience – 1.00% greater than inflation experience
- Demographic experience – as described in 2016 Experience Study Report
- New entrant experience – New members are assumed to be hired at the rate necessary to keep the total number of members in each job class (General Service, School District, Police & Fire, and Judges) constant over the duration of the projection. All new entrants other than judges are assumed to join as OPSRP members. New entrant pay is assumed to grow at the rate necessary for overall system payroll to increase with wage growth experience, as described above.



# Appendix

## Rate Projection Basis

### Reserve Projection

Contingency Reserve as of 12/31/2017 was assumed to be \$50.0M. No future increases or decreases to this reserve were assumed.

The Tier 1 Rate Guarantee Reserve (“RGR”) was assumed to be \$510.5M as of 12/31/2017. The RGR was assumed to grow with excess returns above the 7.20% target growth on Tier 1 Member Accounts. When modeled aggregate returns were below 7.20%, applicable amounts from the RGR were assumed to transfer to Tier 1 Member Accounts to maintain the 7.20% target growth rate. The RGR is allowed to be negative, but the reserve is not excluded from valuation assets when it is negative. We did not include in rates any potential additional employer levy that could be required to eliminate a persistent negative RGR.

# Appendix

## Rate Projection Basis

### Capital Market Model

For each 20-year projection, we ran 10,000 stochastic scenarios for inflation and asset class rates of return. The scenarios were calibrated to represent Milliman's capital market assumptions in terms of expected average real returns, the expected year-to-year volatility of the returns, and the expected correlation between the returns of different asset classes. Annual rates of return for each of the asset classes and inflation are generated from a multivariate lognormal probability distribution. Rates of return are independent from year to year.

For this purpose, we considered the Oregon PERS Fund to be allocated among the model's asset classes as shown below. This allocation is based on the OIC's Statement of Investment Objectives and Policy Framework for the Oregon PERS Fund, as revised June 7, 2017.

	<b>Annual Arithmetic Mean</b>	<b>20-Year Annualized Geometric Mean</b>	<b>Annual Standard Deviation</b>	<b>Policy Allocation</b>
US Broad Equity	7.07%	5.88%	16.45%	<b>18.37%</b>
Non-US Developed Large/Mid-Cap Equity	8.00%	6.48%	18.70%	<b>15.00%</b>
Emerging Markets Equity	10.27%	7.18%	27.35%	<b>4.13%</b>
Private Equity	11.33%	7.68%	30.00%	<b>17.50%</b>
US Universal Fixed Income	4.43%	4.33%	4.55%	<b>8.00%</b>
US Short Duration Bonds	3.86%	3.82%	2.70%	<b>8.00%</b>
Leveraged Loans	5.15%	4.89%	7.50%	<b>3.00%</b>
High Yield	6.36%	5.92%	10.00%	<b>1.00%</b>
Real Estate	6.33%	5.68%	12.00%	<b>10.00%</b>
Global REITs	8.03%	6.13%	21.00%	<b>2.50%</b>
Natural Resources	6.53%	5.78%	13.00%	<b>2.81%</b>
Infrastructure	7.38%	6.43%	14.65%	<b>3.75%</b>
Commodities	5.52%	3.93%	18.95%	<b>2.81%</b>
Hedge Funds	5.94%	5.58%	8.85%	<b>3.13%</b>
US Inflation (CPI-U)	2.50%	2.50%	1.85%	<b>N/A</b>
<b>Fund Total (reflecting asset class correlations)</b>	<b>7.42%</b>	<b>6.70%*</b>	<b>12.95%</b>	<b>100%</b>

\* The model's 20-year annualized geometric median is **6.65%**.

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